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WHO WON? Player's Choice Contest Results—p.37

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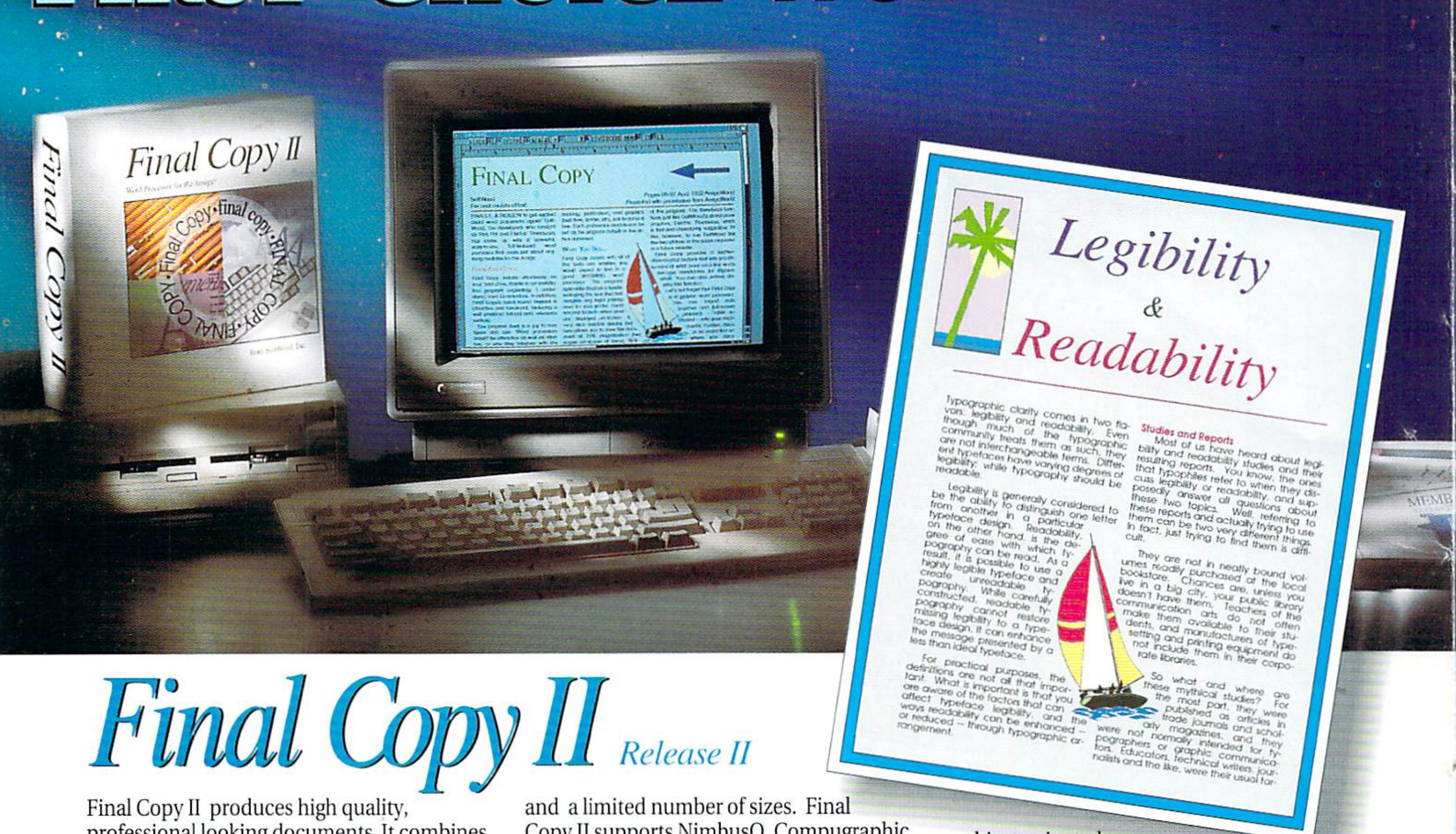
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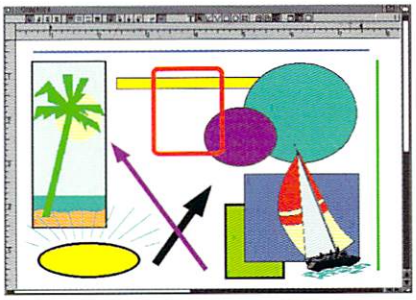
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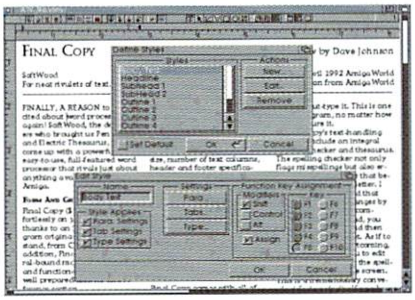
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COLUMNS



December marks AW's sixth Annual Games Special, and recent developments could make the upcoming year the most prolific one yet for Amiga gamers. Our theme, "The New Amiga Games," covers just over a hundred titles targeted both at the new Amiga CD32 (cover inset, above) and the new AGA machines. There'll be more color, more detail, and more action than you've ever seen before, so let your hair down and get ready for some fun!

Contest Winner!

Meet the winner of *AW's* "Player's Choice Contest," who took down the Grand Prize of a brand-new Amiga 1200—*see p. 38.*

DEPARTMENTS

REVIEWS

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COVER PHOTOGRAPH BY EDWARD JUDICE

EDITOR'S DRAWER

In the months ahead, CBM will be improving the Amiga lineup—and with a new chief.

THE PROMISE OF CD32

The big news in Amigadom these days is the introduction of CD32, which marks Commodore's return to the games arena, where they were so successful for so many years.

The CD32 is an impressive product that promises exciting 32-bit gaming entertainment and, with the introduction of the MPEG module, full-motion video playback. Judging from the enthusiastic response it has received in both Europe—where it debuted in July—and Pasadena—site of its US premiere—the CD32 has captured the imaginations of many delighted game players.

At the Pasadena show, Commodore unveiled both the product and a marketing plan in response to critics who may question the company's new direction. Facing the task of competing on two computer fronts, Commodore will concentrate on improving its existing line of products, while, at the same time, promoting its games machine. While the CD32 firmly entrenches CBM in the low-end games-machine market, CBM plans to maintain its commitment to the A4000 line with its focus on video, graphics, animation, and kiosk-type applications. Success in the games area won't hinder, but should enhance, activity and development in other applications areas. Commodore anticipates that enthusiastic CD32 users will also be attracted to the rest of the Amiga platform.

While CD32 captured the spotlight at the World of Commodore-Pasadena show, it, of course, was not the only product of interest. In fact, we were struck by the number and quality of new products and the high enthusiasm level among users and developers. (For a full report see p. 8.)

In his keynote address, US Commodore head Jim Dionne was candid in discussing Commodore's massive reorganization efforts. "Commodore is a much stronger, and more efficient company," noted Dionne, who cited increasing production efficiency, lowering overhead, and simplifying operations as steps taken to ensure a more solid and profitable organization.

Which is not to say that development of new products has come to a standstill. VP, Engineering, Lewis Eggebrecht outlined CBM's future launch plans, which include such products as the A4000 Tower (available later this fall), a new AAA chip set ("10-20 times an improvement over AGA"), and AmigaDOS 3.1.

On a more personal note, I'd like to take this opportunity to bid farewell and extend best wishes to Jim Dionne, head of Commodore US and one of the truly nice guys in the industry. Jim, who ran the Canadian operation before coming to the US almost three years ago, is a 15-year veteran of the home computer wars and traces his origins with Commodore back to the days of the PET.

Taking over as general manager of the US division is Geoff Stilley, who formerly served as VP of the US sales division. We wish both well in their future endeavors.

Dennis Brisson
Editor-in-Chief

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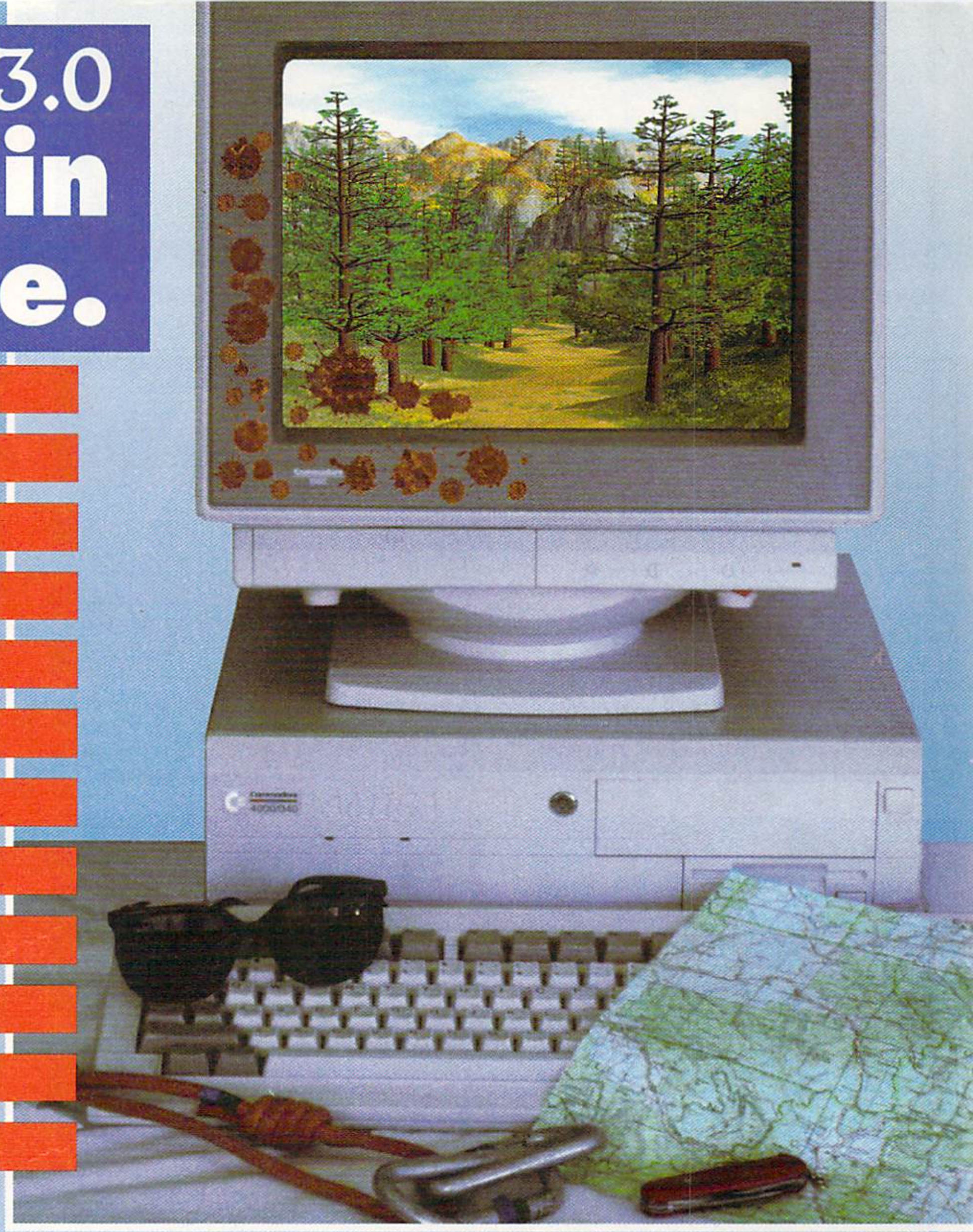
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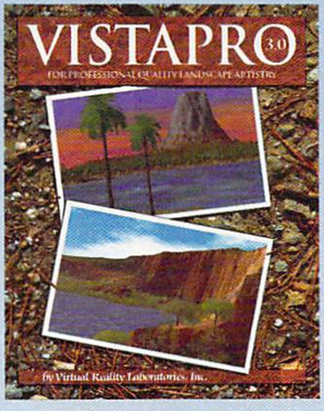
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OVERSCAN

News, New Products and Networks

WOCA Premiers CD32—And More

PASADENA, CALIFORNIA—The September World of Commodore Amiga show began with a press conference, wherein ***Commodore*** announced the US release of **CD32** (see "Games Engine Par Excellence!" on p. 26). "Once people compare what it can do at $399 versus what the competition can do," said now-former company president Jim Dionne, "they will see that it's a good value." (See "Editor's Drawer," p. 4, for information on Dionne's resignation.)

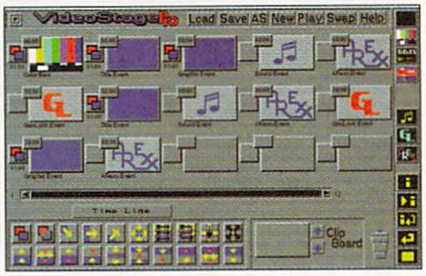
Dionne said consumers should be able to buy CD32—somewhere—by early November. "We're not sure computer dealers are the best channel to sell CD32," he stated. "We're still investigating that." CD32's "national rollout" won't occur until the giant January Consumer Electronics Show, after which CBM may do national advertising through magazines, cable television, and TV infomercials. Meanwhile, a new manufacturing plant in The Philippines is reportedly cranking out 20,000 units a week!

Expansion on the Horizon

VP of Engineering Lew Eggebrecht noted that CD32's single bus allows for RAM, processor, audio, and video expansion. (We heard later from developers who are planning CD32 expanders but would not give details.) CBM, meanwhile, is still working to arrange DOS-level Kodak PhotoCD support; another area of interest is the company's implementation of MPEG, data-compression technology that will bring 30 frames-per-second (fps) video and near-CD-quality audio to CD32 in late November.

John Campbell, Director of Commodore Amiga Technical Services, explained that CBM got users and software developers involved in the design phase of CD32, and said one of the machine's strengths is its mature development environment. He also noted that production costs for CD32 discs are less than for other systems; while Nintendo and Sega cartridges cost $20 to manufacture, CDs cost just $1 each, and Commodore's $3 per-unit licensing fee applies only to games sold—not to all produced.

Commodore reps also discussed plans to add CD32 capabilities to the A1200 and A4000 via a peripheral drive, and to release the A4000 Tower by year's end. AmigaDOS 3.1 is essentially finished, they said, and RTG (retargettable graphics) and the AAA chips may be finalized mid-year '94. DSP (digital signal processing) development has been suspended until '94, and Commodore is now licensing other technology for third parties to finish. (RS# 120.)



Click, drag, and go with VideoStage Pro.

A Show for Firsts

Meanwhile, on the show floor, exhibitors displayed standby products, updates, and brand-new items (we'll concentrate on the latter two). There were even a few companies new to the market. Case in point: ***US Cybernetics***, whose **Warp System** transputer features a 32-bit parallel processor with a 64-bit floating-point unit. The chip works with the Amiga's main 680x0 processor. Four serial links allow it to communicate with other transputers in a linked network. The chip can speed applications as much as a 68040, and each additional one potentially doubles that speed. (RS# 121.)

Systems Development Services introduced its first Amiga product: **Robokeet** presents basic spelling lessons in a game-like environment. (RS# 122.)

Newcomer ***Pride Integrated Video Systems*** announced the **Pride Music Library Catalog**, which lets you audition sound tracks in small bites from your computer. (In cooperation with music-library publishers, Pride is producing audio catalogs of entire product lines.) Adding Pioneer's CAC-V3200 CD Autochanger to your CD drive lets you sample digitized music with one keypress, and cue the disc with another. The centerpiece of Pride's display was the PIV-2001, which allows integrated video-editing and control over the Toaster's switcher. Basic PIV hardware offers eight RS-422A serial ports and as many GPI trigger outputs. (RS# 123.)

The Editors Are In

Stalwart video-editing developer ***AmiLink*** announced **AmiLink CIP** (Consumer, Industrial, Professional) **Personal Video Editor**, which is designed to bridge the gap between consumer-industrial and professional equipment. Control for a variety of affordable gear (all Sony "L" and at least seven Panasonic AG-series VTRs) comes standard; to control pro-level devices, simply add a new module and cable. (RS# 124.)

Scala introduced a video editor, too—this one aimed at the consumer market. **Scala Echo EE100** works with the newest version of Scala's multimedia program, MM300, or its InfoChannel 400. The package includes an intelligent cable that plugs into the Amiga's serial port and has two outputs: one for infrared send/receive and one for bidirectional control of LANC equipment. (RS# 125.)

Nonlinear editing was the tag line attached to ***Digital Micronics'*** **Digital BroadCaster 16** ($2495) and **Digital BroadCaster 32** ($3349) handouts. Both boards, designed for use with A2000, ►

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 100.



Close encounters nightly.

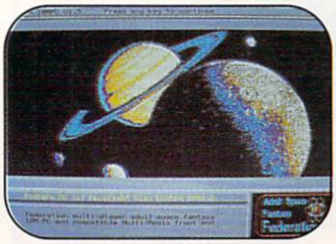
For the cold reaches of space, there's an awful lot of chummy people here.

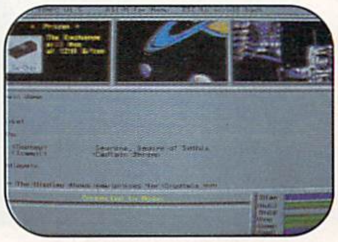
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3000 and 4000 machines, work in full-screen, real-time (30 frames per second NTSC; 25 PAL), and S-Video broadcast resolutions (BroadCast 32 adds component-quality resolution, too). They digitize the video signal, and compress the frames to hard disk in real-time (you choose the compression ratio). Editing software is included; edited productions are decompressed and either encoded to composite signals for recording or output as RS-170 RGB signals. (RS# 126.)

Picasso and Pals

Picasso made an appearance at the ***Expert Services*** booth. The 24-bit board promises greater speeds than AGA machines and compatibility with system-friendly AGA software. Imagine running AGA programs in up to 1280x1024 with 256 colors! **Picasso II RTG** (Retargetable Graphics) also supports custom screen modes with 16 million colors as high as 800x600. The Zorro II/III board claims complete integration with your A2000, 3000, or 4000. (RS# 127.)

Not to be confused with Picasso, ***DKB's* Piccolo** ($699) promises the same resolutions and works with the same Amiga models. It uses EGS support libraries to ensure compatibility with existing software, and promises to run any program that opens on a screen on ►

ON-LINE SCAN

By Tim Walsh

This has been a very good year for freely distributable Amiga games. We saw new board games for lo-res Workbenches, multiplayer games, shoot-'em-ups for PAL modes—and a few truly tasteless ones (for the most part, the good far outnumbered the bad). Games guru Peter Olafson helped me ensure an accurate look at the best of '93. Few can match his depth of knowledge on computer games.

Hard to Describe

My biggest gripe with freely distributable on-line games concerns their descriptions. Often, it seems, system requirements are an afterthought. Some games do not work outside PAL mode, which is understandable given their European origins. Others do not work with older operating systems—also to be expected. On the flip side, some can't progress far enough on the newer operating systems to display an error message. Again, no sweat, since serious gamers are likely to have a device such as DKB's MultiStart for selecting among AmigaDOS verions.

A few games bear downright misleading descriptions that promise "virtual reality" play. Virtual reality is achieved after donning a Darth Vader helmet and having your senses assaulted, manipulated, and generally pummeled into thinking you're experiencing another world. The day true virtual-reality technology trickles down to networks, it will make headlines.

The Envelope, Please

With that out of the way, here are some of the best available on-line games from 1993. You will find just about all of them in the Amiga game areas on the major nets and in freely distributable disk collections.

WBGames

If you're curious which PD games are my personal favorites, the WBGames collection wins hands down. This sixth edition by Marat Fayzullin is written for Workbench 2.04 and later. The five-game set includes WBTetris 1.6, WBColumns 1.5, WBMineSweeper 1.5, WB15 1.3, and WBBoxMan 1.3.

The graphics on all five are first-rate and sport an embossed look, especially on a hi-res screen. All perform remarkably well, even when run simultaneously. WBBoxMan is particularly tough (and the most addicting of the lot), and tests your powers of deductive reasoning, as you try to push stones around a maze without getting stuck.

Lab of Life

If you're desperately seeking one of the most refined and intellectually inspired game on the nets, look no further. Stephen Lepisto of Accursed Toys gives Amiga users another look at Life, a strategy game for deep thinkers. At a glance, you'll find plenty to like. There are ways to customize the game with different playing pieces, options for changing the rules of the game, and a generous portion of thorough documentation, including on-line help.

UTG

Done in the tradition of the commercial Ultima series of graphic adventures, Chris Hurley's UTG 1.0 is a high-quality game for AmigaDOS 2.04 or later. UTG offers sophisticated graphics and music, and a comprehensive plot. I initially had trouble getting the hang of this game, but once I cleared that hurdle, the play was not bad. Considering the game's sophistication, I found it hard to believe that UTG is the author's first C program.

AHextris 1.0

With AHextrix 1.0, Ives Aerts brings us a well-written, $15 shareware hexagonal version of Tetris. Unlike other PD versions of Tetris, this one has beautifully detailed graphics that show off a stone-like look. Great, addicting fun to play and gentle on your multitasking Workbench 2.04 or later.

Amiga Boulder Dash

Recently updated to version 11909, Amiga Boulder Dash by Jeff Bevis is brimming with nice touches beginning with the documentation in AmigaGuide format for rapid, painless access. The program gives you a cave editor, plentiful play options, and the look and feel of a commercial game. AmigaDOS 2.0 or later is required, as is a generous helping of fast RAM.

Blood Ball

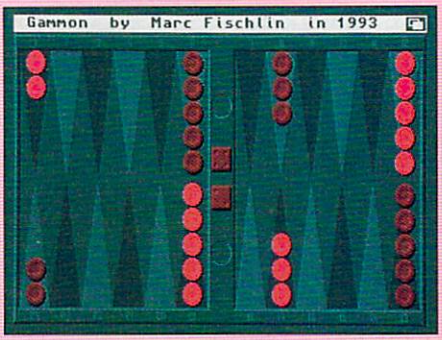
I'm not sure whether to describe Kevin Sheller's shareware as either an ancient or a futuristic football game. It features an eye-catching, scrolling, concrete field of elves and other medieval characters. Plenty of strategy is required to determine where to place the players and which ball-carrying duties to assign to each.

Gammon 1.3

Marc Fishlin of Germany wrote this nicely detailed rendition of backgammon for AmigaDOS 2.04 or later. It offers one of the most superb backgammon screens in the land of freely distributable software—and that's only part of the picture. Options include a choice of board colors, the selection of a human or a computer opponent, varying levels of play, and the ability to save game settings.

Scorched Tanks

This $10 shareware game from Michael Welch is a two- to four-player artillery-type game based on Scorched Earth, found on the PC block. There is plenty of strategy and excitement here to keep everyone happy. □



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Workbench (2.0 or higher). DKB is now the exclusive North American distributor for the German-developed board, and for the higher-end Rainbow display cards, plus the Peggy MPEG decoder (a JPEG board is slated for year-end release). DKB also introduced a RAM card: **DKB 3128** adds up to 146MB to all A3000/4000 systems. (RS# 128.)

MacroSystems US, displayed its updated **V-Lab** video digitizer and **Retina** display card/AGA emulator, and a new hi-res, low-cost **sound digitizer/editor**. The company also announced a buying incentive: With the purchase of any MacroSystems product, you can get **The Bernoulli Box 150** removable-media drive for just $499. (RS# 129.)

Another company with lots of products was ***GVP*** (RS# 130). Warner Bros. animator Rusty Mills appeared to promote his **ImageFX tutorial videotapes**, and demonstrate how the image processor is used in the TV series *Animaniacs*. GVP showed two other new items, the **EGS-28/24 Spectrum** 24-bit graphics board and **TBCPlus**. Spectrum, an entry-level Zorro II/III card, displays video-resolution (NTSC, PAL, SECAM) and hi-res (1120x832) screens. It supports Workbench 2.1 and up, and promises compatibility with Commodore's forthcoming RTG graphics standard. For true single-monitor convenience, it has a pass-through connector for the native Amiga RGB display. Spectrum uses EGS device libraries for broad software support, and comes bundled with graphics programs.

TBCPlus, a Zorro II card for the A2000, 3000, or 4000, operates as an infinite-window time-base corrector using eight-bit 4:2:2 digital-signal processing. It offers a real-time framegrabber, 24-bit framebuffer, and SMPTE/EBU timecode reception/generation in all VITC/LTVC formats and standards. Plus, it transcodes composite and Y/C inputs into simultaneous composite and Y/C outs, and has amp controls.

More Video

Other video-type products included ***Centaur's*** **OpalVision**. The long-awaited Roaster chip, which adds real-time live-video effects, should be available by the time you read this. (RS# 144.)

Oxxi's new **VideoStage Pro** lets you create video and on-screen interactive productions. It has different tracks for graphics, animated titles, sound, ARexx, genlock, and control events; it supplies more than 60 transitions. The program replaces VideoTitler in Oxxi's lineup, and comes in two versions, both of which allow remote control via modem (the distinguishing feature: support for DMI's Digital BroadCaster). (RS# 133.)

Digital Creations announced **SuperGen SX** (S stands for S-Video, X for external). The broadcast-quality genlock ($749) attaches to the RGB port of any Amiga. It promises the proper color clamping and dynamic range for AGA machines; a disable switch lets you use Productivity mode without disconnecting. Digital Creations also displayed its **Video Slot Box**, a compact chassis with four video slots, three PC/AT slots, four drive bays, and a 230W switching power supply. The Slot Box works with A2000, 3000, and 4000 models. (RS# 134.)

Along the same lines, ***Ambitious Technologies*** showed a larger version of its **Toaster Oven**. For $799 you get the ability to use 11 card slots at the same time, an extra 9 drive bays, and a 300W power supply. (RS# 135.)

Axiom Software has updated **Pixel 3D** and **ANIM Workshop**, and its new **WaveMaker** lets you create flying-logo animations with NewTek's LightWave 3D (Toaster) software simply by clicking buttons. It even provides animations that you can drop your logo into. (RS# 136.)

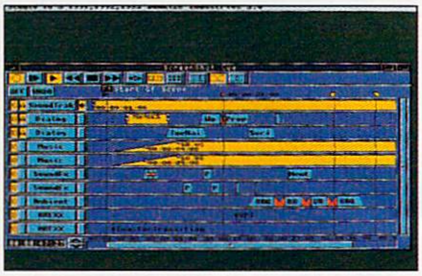
Another product designed for use with LightWave, **LightRave** (***Warm and Fuzzy Logic***) is a hardware module that lets you run NewTek's program without the Video Toaster. Unlike the Toaster, it runs even on A500s and A1200s (of course, you'll need NewTek's Toaster 3.0 software kit). LightRave also adds features to LightWave, and promises to render images faster. (RS# 137.)

And More Yet

In a booth with medieval decor, ***Terra Nova Development*** displayed its new **Magic Lantern** utility. The program takes IFF picture and sound files as input, and generates animations that run on various framebuffers (including Retina and GDA) in up to 24-bit color. You can edit the result via the graphical interface or the ARexx port. (RS# 138.)

Nearby, ***Moonlighter*** displayed its **TapeWorm FS** software, which promises to make your tape drive behave as a removable hard disk. (RS# 139.)

Chaocity announced two new products. **GeoForge**, a digital-elevation model landscape-design tool, enables you to create entire fractally-designed planets.



Studio 16 3.0 puts on a better face.

You place the major features, and GeoForge does the rest. You can then fine-tune to a single meter of resolution! The other program, **Fridae**, promises to keep track of events and appointments, and to remind you as many times as you wish. Fridae can even remember to start rendering images overnight when you forget. (RS# 140.)

Some companies used the show to introduce new versions of old favorites. ***CSA***, for instance, announced an economy version of its Twelve Gauge for the A1200. **Twelve Gauge L C** ($599) runs its 68030 processor at 33 instead of 50 MHz, yet is fully upgradable. (RS# 141.)

Soft-Logik previewed **PageStream 3.0**, with its new trapping and plate-control features, and Pro Page file-import function. This version makes it easier to apply attributes to text and objects, and auto kerning, auto hyphenation, and Pantone-system support are now standard. Soft-Logik is also updating its **TypeSmith** font editor, which now has an auto-trace feature. (RS# 142.)

Also on the upgrade path was ***SunRize***, with **Studio 16 3.0**, the new version of its digital-audio hard-disk recording and editing software. This incarnation has a more intuitive time-line-based cue list, automated fades and cross fades and mixing, external MIDI mixer support, SMPTE chase, assignable tracks, and more. SunRize also mentioned its upcoming **DD524 Digital Audio I/O** board, which adds an AES/EBU or S/PDIF in/out interface to your A2000, 3000, or 4000. (RS# 143.) ■

—BG

OVERHEARD

GMR Productions now handles sales, distribution, and support of all Vortex ATonce, Golden Gate 386SX, 486LC, and Monitor Master products. For update and pricing details, call 718/967-1509.

Overscan is compiled by Ann Record. Send your news to Overscan, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458.

REVIE

Full-featured AGA-compatible paint program.

Brilliance 1.0

Digital Creations, $249
1.3/2.0/3.0 compatible.
Hard-drive installable.
Copy protection: Dongle.

Accelerator compatible.
Minimum system: AmigaDOS 1.3 or higher, 2MB.
Recommended system: AmigaDOS 2.0 or higher, 4MB, AGA Amiga, hard disk, 68030 or 68040 accelerator.

When Digital Creations released DCTV, my colleagues and I raved about its interface. At long last, we had paint functions and controls that Amiga artists could use for "painting" in all but the truest sense of the word. But the image quality was not up to par for 24-bit standards, making DCTV tough to use for professional work. When I saw early advertisements for Brilliance many months ago, I imagined it would usher in a new era in Amiga paint programs, perhaps using DCTV's interface and painting tools, but with support for HAM8 and the AGA support replacing DCTV's black box, and doing an all-around better job in the process.

Two for the Price of One

Brilliance is a hefty package with lots of documentation and two programs: Brilliance and TrueBrilliance. Brilliance loads images with a register-based palette of 2 to 256 colors, but does not accept any form of HAM or True Color images or animations. For that, you need TrueBrilliance, which paints in HAM or HAM8 modes, depending on your Amiga's chip set. It also loads and saves 15-bit (32,000 colors) and 24-bit images on ECS Amigas.

For example, you can load a 24-bit image into a HAM screen, paint on it and save it in 24-bit, maintaining full-color accuracy, much as ToasterPaint (NewTek) does. Viewing the image with a 24-bit display card verifies the quality and integrity of the 24-bit image. The interfaces for both programs are virtually identical, with the exception of some HAM-related functions. As expected, both versions run on accelerated and nonaccelerated Amigas.

Brilliance compares well with DeluxePaint IV AGA in its tools, functions and features, and also goes head to head with it in overall performance. Surprisingly, it performs some functions better than DeluxePaint, and the TrueBrilliance program does one thing DPaint cannot—it maintains 24-bit image data so you can paint in HAM or HAM8 and save in 24-bit.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 100.

Many of the keyboard equivalents are identical. Both Brilliance and TrueBrilliance handle the creation of animations in much the same way as DeluxePaint IV AGA, offering Op-5 byte (DPaint) animations and animbrushes, and both programs also save frames in a sequential format. You'll find the new Op-8 WORD and Op-8 LONG animation formats are supported as well.

Those familiar with animation processes in DeluxePaint should have no trouble with the transition to the animation controls in Brilliance. The Tweening menu in Brilliance performs all the functions of DeluxePaint's Move requester, and its Opacity, Decay, and Trails options add nice decaying trails effects. Unlike DPaint, Perspective is available only through the Tweening menu, instead of being a separate function, and brush morphing is found with the animbrush functions. Unfortunately, Brilliance lacks a DPaint-like "Light Table" option for animators.

Fills and Frills

A very nice feature is the Realtime Preview mode, which displays text and other clipped brush objects, showing the effect of certain painting options. For example, with Transparency turned on, the brush appears partially transparent, even before being applied. Other options include Tint, Colorize, Brighten, Darken, and Negative. A slider controls the amount of brightening or darkening you apply. The effect of each of these is shown in a real-time environment as you move the brush over your picture.

Among other painting modes are Smear, Smooth, Range, and Mix. When these are combined with Transparency, they create extremely smooth blends and soft edges, particularly in

W S

HAM8 mode. Various dithered-fill and brush-fill options parallel those found in DPaint, but I was disappointed to find no watercolor-painting mode, such as that provided by DCTV, and that the more unusual fills from DCTV were missing.

The airbrush tool has size, flow, and focus controls that you can combine with the variable transparency settings for nice control. But, unlike DPaint, this airbrush cannot be used with Smooth or Smear.

Rotating a brush on its z-axis normally distorts the aspect ratio, since pixels aren't square, but Brilliance offers a much-appreciated aspect-correction option on rotated brushes. The program can store up to eight brushes for instant access. Simply cut a brush from your screen and click on one of eight Brush Wells in the Brush menu, and it becomes an iconified image. To use the brush again, click on its icon and paint with it.

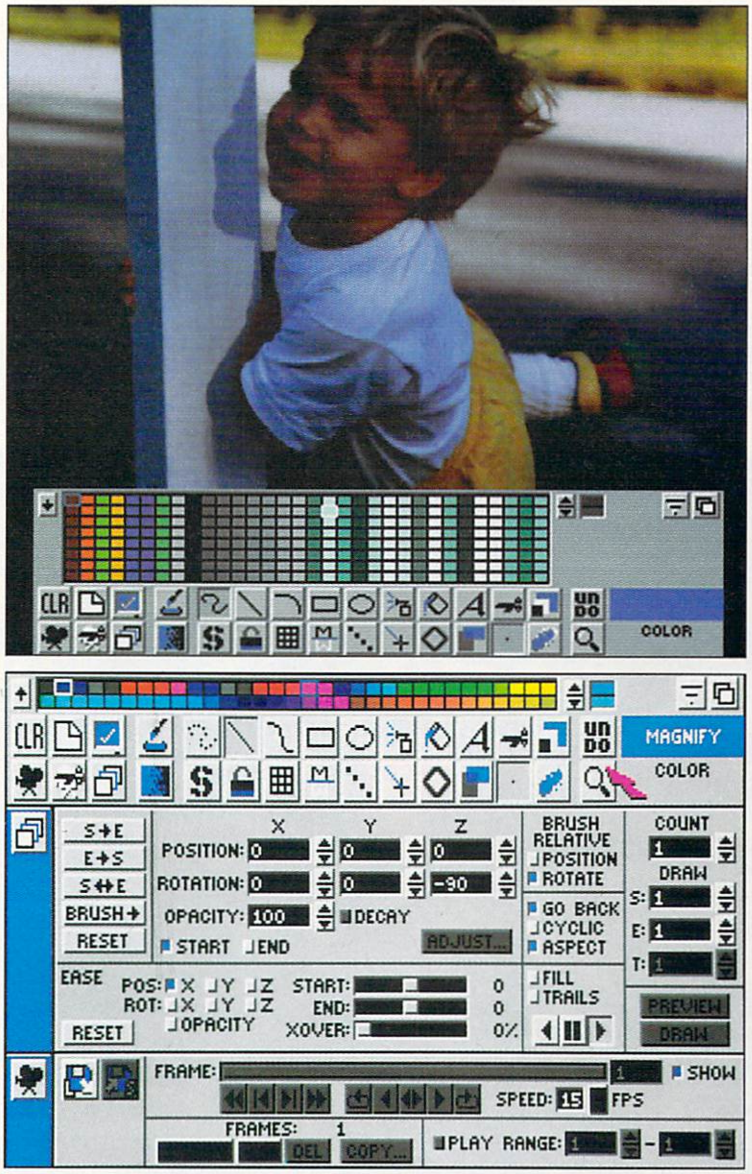
My hat is off to Digital Creations for incorporating multiple undos in Brilliance. Your ability to undo and redo changes to your heart's content is limited only by the amount of RAM in your Amiga, and you can preset the size of the undo buffer as a tooltype in the program icon. The presence of Bezier curves is also welcome.

The User Interface

Unlike DPaint and most Amiga programs, Brilliance does not use pull-down menus; instead, you access all functions through stackable menu panels. You can toggle all open panels on or off together. When off, there's access to the full image for painting or, when on, simultaneous access to several panels of functions. The keypad numbers 1–9 are preset hotkeys that call up sets of menu panels, and you can easily reconfigure them for any combinations you desire. There are also more than 45 tooltypes that you can set in the program icon to preconfigure the program on startup, including everything from screen mode and size to default palette and ellipse rotation.

The right edge of the main menu is the user-feedback area. Along with other information, it continuously displays a text description for any button, slider, or string gadget in your current menu panel. If you don't know what a gadget does, just place the mouse pointer over it and a description instantly appears. With this option, you hardly need the well-organized manual of some 175 spiral-bound pages.

You can expand the main-menu palette display to view up to 256 color registers at once. The palette-mixing menu provides four mixing options and has the usual sliders for color mixing in RGB and HSV, plus CMY and a HAM color cube. This cube, a clever two-dimensional representation of a 3-D color cube, allows for the selection of remixed colors from the cube in RGB and CMY mixtures.



HAM8 never looked better, while the animation-control panel gives Brilliance plenty of functionality.

The Good, the Bad, and the Dongle

Brilliance is user friendly, doing an excellent job with nearly every function and option it offers, and the interface is well planned and highly functional. I can certainly recommend it for what it does. I could actually get along without DeluxePaint IV AGA if I had Brilliance and TrueBrilliance, but it would take both of them to replace it.

The package has certain weak spots that bear mention. In contrast to the finer points of the interface, the Stencil menu is confusing and inadequate. All you can do is add to, subtract from, or replace the current stencil, and there is no way to know what colors are currently included. Also, the Mirror tool is much inferior to DPaint's Symmetry ►

tool, being strictly a two- or four-point x/y-axis mirror.

Although TrueBrilliance handles 24-bit data, it provides no means of displaying a 24-bit image, and it has no ARexx port. Incorporating ARexx would at least allow users to send 24-bit images via a hot-key directly to a display board, like the Firecracker (Impulse) or the Toaster's framebuffers. Omitting ARexx from a professional-level 24-bit graphics program in today's Amiga market is not wise software engineering.

In my opinion, Digital Creation's dongle is a lapse of reasoning in Brilliance's design. Its presence is an unwelcome blemish on an otherwise first-rate paint program that does a fine job at practically everything. The dongle serves only as a gauntlet thrown down before the pirating community. Let's hope the future will see a better form of copy protection from Digital Creations and other productivity software manufacturers.

—Fred Hurteau

ProControl

ASDG, $90

Hard-drive installable.
Not copy protected.
2.0/3.0 compatible.
Accelerator compatible.
Minimum system: Art Department Professional 2.3 or MorphPlus 1.2, 4MB RAM, hard disk.
Recommended system: 8MB RAM, accelerator.

MultiFrame

MacroSystems US, $129.95

Hard-drive installable.
Not copy protected.
2.0/3.0 compatible.
Accelerator compatible.
Minimum system: Art Department Professional 2.1 or MorphPlus 1.0, 4MB RAM, hard disk.
Recommended system: Same as minimum system.

Batch processing software for ASDG's Art Department Professional and MorphPlus.

"If you build it, they will come," said a voice to W.P. Kinsella in his popular novel, *Field of Dreams.* Over time, ASDG has enhanced Art Department Professional into a wondrous image-processing program. As anticipated, extended control has appeared in the form of ProControl and MultiFrame. Both programs offer simplified control over ADPro's functions and facilitate batch processing of images.

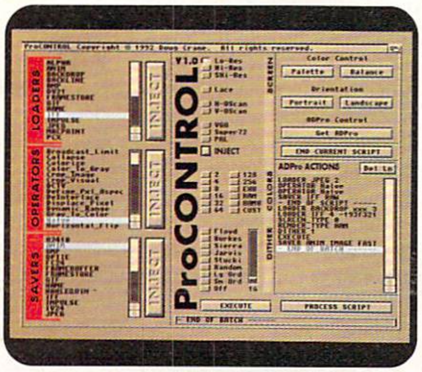
Instances where batch processing can come into play go far beyond the format and size conversions commonly employed by ADPro users. One batch scenario might be building an animation from a series of frames and accurately enhancing those frames to match one another with equal brightness, color, and hue levels. Another scenario might be the assembling of a series of frames, each containing text positioned in the same location over each frame. Still another use might be the creation of flying logos, transitions, and even morphing techniques spanning groups of frames.

Both ProControl and MultiFrame accomplish the same end results, but go about their business in different ways. ProControl runs a series of different frames through a sequence of ADPro operations, applying enhancements to each frame. MultiFrame is mainly oriented

toward applying one process to a numbered sequence of frames, then running the same sequence of frames through any remaining processes.

In Control With ProControl

ProControl is billed as a batch-processing front end for ADPro and MorphPlus. It is easy to use, with a control screen that displays all available loaders, operators, and savers. Behind the graphical interface, ProControl builds and transmits an ARexx script to ADPro, which it automatically launches. A double-click on any item injects it into the script window. Inserting blank lines to add ARexx commands into the script is also just a click away.



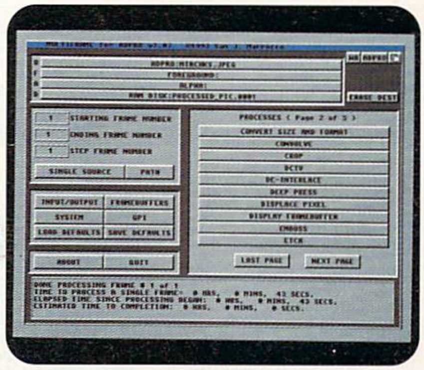
ProControl's interface gives you instant access to ADPro.

You can choose multiple image files from any combination of directories. (You can configure the program to work with ASDG's Sentry program, which scans a specified directory for new files and sends them to be processed.) Furthermore, long-term users of ADPro will be happy to hear that they can apply and reapply any image operators to the chosen images in any desired sequence. You can set all options—resolution, palette, color balance, dithering, or image orientation—for the final output file and select the destination device, in any specified graphics format.

This level of flexibility also exists in scripts, which can be nested within other scripts to provide for fast, complex effects. You can subject the combined or individual script files to multiple iterations, producing a complete animation file.

You can edit scripts to the limited extent of inserting and deleting lines, using a set of keyboard shortcuts to speed the process. You can also save scripts and identify their functions and purposes with comments for later use. In addition, you can save and reload the entire "state" or status of ProControl at a given moment, including both active scripts and input/output filenames. Because communication between ProControl and ADPro occurs through ARexx, system-error messages are a big help in debugging scripts.

ADPro itself is accessible through buttons on the ProControl control screen or by using the standard "flip screens" hot- ►



MultiFrame's buttons are intuitive.

key combination (the front/back gadget didn't work). Multitasking is polite. You set the parameters for each operator numerically (rather than graphically), and the necessary access to ADPro is provided. It's easy to get to ADPro's screen, load the image for processing, experiment with the parameters, and do test renders. Then, you must write down the numerical values, return to ProControl, and enter them into the appropriate requester. If anything is particularly clumsy and slow about ProControl, it is this. There is great flexibility here, however, and overall it is a stable and solid program.

Manipulating With MultiFrame

MultiFrame takes a different approach to batch processing images. Its primary purpose is to run single or multiple files through a single process in ADPro or MorphPlus and resave them. Whereas ProControl sends one image at a time through multiple processes, MultiFrame sends one image at a time through a single process.

A nice feature of MultiFrame's design is that it provides a graphical front end for setting the control parameters of many of its operators. The control screen is simple and easy to read, with buttons controlling virtually all the primary operations of the program. For instance, the press of a button selects source and destination files, operator, configuration, and other options. When the choices are complete, the program begins its ARexx-command calling routine. As simple as that. Like anything else, it's the variations that increase its flexibility.

You can assign any name to single images, but when a series of images is to be processed, each one must have the same filename with sequentially numbered suffixes. After processing, you save the files with the same numerical suffix. You control all input and output options from a separate screen, including loader and saver formats, output resolution, and color, dithering, palette and image type information.

MultiFrame's method of working with the ADPro or MorphPlus operators is interesting, powerful, and flexible. All the operators are available, plus a few custom-designed combinations of operations. In addition, you can run an ARexx script as a process, giving plenty of options for running special-purpose combinations. Start and end values can also be specified, making it easy to do gradual changes over a defined period of time. For example, it's a snap to process all the frames of an animation to produce an increased bluish hue.

A number of other features bear mentioning. There's a nonlinear path control screen that allows for altering the way MultiFrame interprets data parameters over the range of frames to be processed. You also have direct control over the Retina (MacroSystems), Firecracker (Impulse), OpalVision (Centaur), and DCTV (Digital Creations) framebuffer displays. Another nice touch is automatic triggering of up to four GPI outputs, with some additional hardware in place, so that you can access external switchers, digital disk recorders, and other devices. Finally, you can later recall every control parameter and variable of the MultiFrame configuration, making standard changes to graphics free from deviations.

Now, Which One?

It is difficult in comparing these two very similar programs to say which is the better. Both fulfill their promise of providing batch processing and enhanced control over ADPro and MorphPlus. Both are quite straightforward to work with. And both come with clear, well-written manu-

als and thoughtfully designed interfaces.

While similar in function, each program does take a different approach, and this may be the deciding factor as you consider your particular needs and most likely applications. You won't be disappointed in either of them.

—Michael Hanish

Bernoulli Box 150 Transportable

Iomega, $699

All Amigas.
SCSI connection.
1.3/2.0/3.0 compatible.
Accelerator compatible.
Minimum system: Any SCSI port-equipped Amiga.
Installation: Easy.

Transportable removable-media Bernoulli drive.

When I sat down to write this review, I was ready to tell how the Bernoulli Box 150 Transportable makes an attractive storage device for a select group of professional Amiga users whose needs justify the high cost of the drive. Then Iomega went and ruined my plans by reducing the retail price by over 40%, while also improving the overall performance and capacity. Finally, if that weren't enough, it released a model certified for Amiga use!

Now I have to start all over by stating that the Bernoulli Box 150 is a *great* choice for *any* Amiga user who is seeking virtually unlimited storage capacity at a reasonable price. (Iomega also offers an internal version that fits in a 5.25-inch bay and retails for $599.)

Well-Cushioned Data

An external drive complete with a carrying handle, the Bernoulli Box 150 Transportable is a handy device. Installation is a snap—just plug the drive into the DB-25 connector on the back of an Amiga's SCSI controller and power up. Switches on the rear of the drive control SCSI address and termination, making configuration for your particular setup fast and easy.

Bernoulli drives have been around for a number of years in varying capacities. They use the Bernoulli effect, where air pressure is used to spin a 5.25-inch disk at hard-disk-like speeds. Protected by a durable hard-plastic shell, the rugged, reliable Bernoulli disks store up to 150MB of data. Until recently, though, it was hard to recommend Bernoulli drives to casual Amiga owners, for the early models were much slower and more expensive than hard drives, and, due to problems with Iomega's older SCSI code, they were not 100% readable on Amigas.

Quicker, Too!

I initially used HDToolBox to prep a removable disk as a single 150MB partition. Iomega recommends one partition per disk due to problems that may arise when using multiple partitions on removable AmigaDOS devices. I formatted the drive and copied the contents of my work partition to it. After using other removable drives, I was expecting the Bernoulli to be somewhat sluggish, but I was pleasantly surprised with its performance. The Box 150 is about three ►

times faster than earlier Bernoulli drives, and it benefits from the addition of a 256K read/write buffer; Iomega rates its access speed at 18 ms. Although benchmarks show it at a disadvantage, the drive wasn't noticeably slower than the Quantum in my A3000 in regular use.

The Bernoulli is a great solution to the problem of hard drives always filling to capacity: When you need more storage, just buy another 150MB disk for less than $100. You can even use Bernoulli disks to back up your hard drive; although the media's not cheap, it's much faster than traditional tape backup. (The drive will also read and write 35, 65, 90, and 105MB cartridges, and will read 44MB cartridges, which is great for data exchange with people who own older drives. The cost per megabyte is higher on smaller cartridges, though, so you may want to stick with the 150MB units.)

The unlimited storage is great for large rendering projects, and the portability of the Bernoulli cartridges is handy for moving large projects between locations. It's also less expensive and nearly as fast to overnight-mail a Bernoulli cartridge than to transfer dozens of megabytes of data via a modem connection. Furthermore, it's a handy way to take your data on location: If your client has a Bernoulli, just bring along a disk; if not, you can pack up the entire drive and carry it along. Just plug it into the external SCSI port of any similarly-equipped Amiga with an RDB (Rigid-Disk Block) compatible controller, and you will immediately be up and running with your data.

PLATFORM MANAGER

The Bernoulli is a boon to Amiga users with PC and Mac emulators. Instead of dedicating a sizable chunk of valuable hard-drive space to Mac or PC programs and files, you simply buy a cartridge for each emulation mode.

I successfully tested the drive with Utilities Unlimited's Emplant Macintosh emulator (just move the cable to the Emplant's SCSI port for the best performance) and Commodore's A2386SX Bridgeboard. The Bernoulli cartridges also come in handy for transferring to Macintoshes or PCs data files that are too large to fit on floppies. You can use the commercial version of Consultron's CrossDOS to mount the Bernoulli as an MS-DOS partition and then read that disk in a Bernoulli drive attached to a PC. Similar transfers are possible with Macs.

Although Iomega calls this an Amiga drive, it's actually just the latest version of the Box 150 packaged with a two-page set-up guide that explains how to install it on the Amiga. No software is included, but everything you need to set up the drive is on your AmigaDOS Install disk. Happily, Iomega's tech support department is familiar with the Amiga: When I had a question about formatting the Bernoulli disk with CrossDOS, I was transferred to Macintosh tech support, where the person I talked to was well versed in Amiga matters and answered all of my questions. Support is also available via CompuServe, the Internet, and Iomega's BBS.

The drive itself is of high-quality construction and looks as if it will stand up well to being transported. The heavy-gauge case has a cooling fan and two SCSI connectors on the rear. Iomega

backs the drive and media with one- and five-year warranties, respectively.

Great Between Meals, Too

I travel with the Bernoulli as though it were my lunchbox, transporting it between an A3000 at work and my A2091-equipped A4000 at home. It seems unaffected by the jostling and remains completely trouble-free. My complaints about the drive are few: For one, the SCSI cable is too short to allow convenient placement with multiple setups and is sure to spell problems for A3000T owners; but this is easily remedied by buying a longer cable. Also, although the drive is easily transportable, there's no compartment or clip for the power or SCSI cables, so you'll need to carry them separately.

These are minor complaints, however, and I'm extremely pleased overall with the Bernoulli, especially in view of its new low price. The drive offers almost twice the storage capacity of its closest competition, the Syquest 44/88, along with faster performance and a lower price. In your quest for more storage, don't overlook this gem.

—Denny Atkin

Scenery Animator 4.0

***Natural Graphics*, $99.95**

Hard-drive installable.
Not copy protected.
2.0/3.0/AGA compatible.
Accelerator compatible.
Minimum system: 3MB RAM.
Recommended system: AGA Amiga, hard drive, math coprocesssor, accelerator.

AGA-compatible fractal landscape generator.

Scenery Animator began as a demo fractal landscape program, called SceneGen, which amazed the market back when the Amiga 1000 was cutting-edge technology. Scenery Animator 4.0 is a 3-D landscape-rendering and animation program that continues to fascinate. New features make it more versatile, more fun, and easier to use than ever before.

Scenes for All Seasons

Scenery Animator 4.0 comes with a printed manual and two disks containing an ".881" version for accelerated Amigas and a version for those of the non-accelerated persuasion. You also get several DEM landscape files, two animation-viewer utilities, and something new: 3-D objects.

AGA support comes in the form of allowing rendering in 16, 32 and 256 colors, HAM and HAM8, IFF24, DCTV, and PCX graphics formats. Non-AGA Amigas can also render HAM8 and 256-color images, except that you'll output to a file instead of the screen. Displays now include low- or high-res, interlaced, and overscan ranging from standard 352x480 up to 768x482 video format. AGA machines can also render up to 1536x482 overscan in new Super res. Animation formats are likewise expanded, with ANIM-5 (DeluxePaint compatible) animations in all the above formats except IFF24 (frames only) and PCX (no frames or ANIMs).

Scenery Animator generates imaginary fractal landscapes and draws accurate landscapes from Digital Eleva- ►

tion Maps (DEMs), which are small slices of the planet taken from orbiting satellite data. Scenery Animator draws landscapes such as Mount St. Helens or the Grand Canyon from this 3-D map data. You can view this 3-D fractal world from any angle by placing the "viewer" or camera in various locations. The camera travels along a path you assign and renders a series of image frames as an animation. The resulting illusion of flying through the landscape is amazing.

The program generates realistically moving fractal clouds at any altitude, and it lets you add lakes or oceans, complete with rolling waves. You can "fly" across the water, which makes the waves appear to move, and, for added realism, animating the light source across the sky simulates the sun's movement. The real fun starts when all these features are combined to create realistic images and animations. Changing palette colors provides all manner of additional effects, from mountains



Scenery Animator's interface.



A view from behind.

bathed in moonlight to barren landscapes from alien planets.

LEARNING "GEO"GRAPHY

AGA support is a welcome and timely addition to Scenery Animator, but that's not the only new feature. Version 4.0 lets you place 3-D objects in .GEO format (VideoScape 3D) anywhere in your landscape and even animate with them, opening a whole new range of creative possibilities. You can also individually place Oak and Redwood fractal trees generated by Scenery Animator anywhere on your map. This is useful for adding trees around a building, along a river bank, or near the camera for compositional framing of a scene. Tightly bunched trees placed partially below ground level give the appearance of thick bushes.

You are provided with a nearly endless supply of supplementary goodies in conversion utilities that change other 3-D objects to .GEO format. The accompanying rendered image of two Stealth jets flying above a river valley uses the stealth.geo object from the program disk, and several other .GEO objects that are included. This new aspect adds

tremendous power and is sure to become a real hit.

A New World Order

New controls on the main screen make Scenery Animator simpler than ever to use. A flat terrain is now represented in the Preview window until you choose a fractal or DEM. Camera view movement is greatly simplified with the four cursor (arrow) keys for up, down, left or right, and the Frwd and Bkwd buttons. These move your camera the distance in meters that you enter into the Distance string gadget, giving precise control down to one meter. The Max button replaces the old Distance button, and a welcome new Undo button lets you change your mind.

The Pitch and Bank controls now look like clock faces, which are visually logical and easy to use. Stretching out a box of any size in the Preview window zooms that area to fill the window, and the Object and Box buttons speed up Preview window updates when you move the camera. An A4000/040 updates the preview in about one second, even with more than 180 objects loaded into a landscape, but non-accelerated machines might well take advantage of these buttons.

Experienced users of Scenery Animator will notice changes on the Map screen, too. I especially like the new Lens and Dir buttons that independently lock the lens focal length and direction of view. Moving the camera no longer requires readjusting these settings as before. The Zoom, Normal, and Frame buttons provide for zooming the map up to 512X magnification, thus allowing fine control when positioning 3-D objects on the map. The Cam and Obj buttons toggle between camera/animation controls and the new object controls.

Deleting or adding 3-D objects and fractal trees to the map is as easy as clicking the mouse. You can scale 3-D objects independently and they will rotate around three axes called East, North, and Vertical. These axes are relative to the map, not to the object, so if a north-facing object turns to face the east, its north axis changes to its east axis, and vice versa. This gets confusing, since you don't know at what point the axes swap. Rotation is entered as degrees of change from the current setting, which is always shown as zero. I would much rather use the object's axis with pitch, bank, and compass heading, just like the camera, and have a numerical indication of the current setting in degrees for each axis on each object.

When animating with .GEO objects, you will find they have a direction, pitch, and speed totally independent of the camera. This allows, for example, a jet coming from behind the camera to zoom past it into the horizon even as the camera itself flies across the landscape. What a great effect!

The Best-Made Plans

Other than the problems with controlling object rotation, Scenery Animator falls short in a few other areas. It would be helpful to have more options for animating objects, including curved paths and rotation while moving. Nonetheless, Scenery Animator 4.0 is a solid step forward, adding AGA support and endless possibilities with its new 3-D object features. It's still easy to learn and even simpler to use. The additional power to place and animate scalable 3-D .GEO objects and fractal trees anywhere in the landscape is going to make this version a real hit. Natural Graphics has another winner on its hands.

— ***Fred Hurteau***

Reviews continued on p.52.

offers no elegant way of bouncing back and forth between the two. Another minor nuisance is that clips didn't seem to easily snap to one another when dragged into the timeline. When compared to the sophisticated timeline trimming abilities of Avid's Media Suite Pro, this aspect of Media 100 has a little catching up to do.

Once you are finished editing your program, outputting could not be easier: Simply select Create Master from the Program menu. With your analog tape device connected, Media 100 lays down an ultra-high-quality video and audio output of your digital data.

Eager for the Next Phase

Media 100 lacks a few features that early adopters of the system will probably want. The ability to utilize some kind of Media 100 QuickTime codec to be accessed from within other high-end QuickTime products is the first thing that comes to mind, but there is promise that this is not far off. Much of the Media 100 literature suggests that future versions of the product might be controlled directly from within Adobe Premiere. This would truly be a coup, and if Data Translations could pull it off, they would win the hearts of many in the digital video community.

The engineers at Data Translations should be commended for bringing full-motion images on the Mac to a new level of quality. This product will surely fill a gap in a market that presently requires you to build your post-production studio piece by piece or buy a turnkey system with some annoying restraints. The fact that this is version 1.0 of Media 100 leads me to believe that future incarnations will continue to improve and be more powerful, fulfilling the promise of digital video.

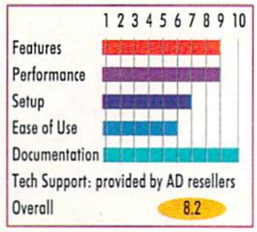
Lawrence Jordan is a motion picture and television editor who, after 10 years of working on celluloid, now practices his craft primarily in the digital domain. He was a speaker for Apple Computer at its first annual Digital Video Symposium and has taught classes at UCLA Extension in digital technology. His most recent credit is the episodic television series N.Y.P.D. BLUE for Steven Bochco Productions.

3D Studio Release 3 PC

Autodesk, $2995

System Requirements:
386 PC or better: Intel-compatible math coprocessor, 8MB of RAM, hard drive, mouse, S-VGA graphics.

REVIEWED BY HARRY McCRACKEN



Better images, faster. That's the big idea behind Autodesk 3D Studio Release 3; this new upgrade to the dominant high-end animation package for PCs preserves Release 2's user interface almost unchanged, but there are dramatic improvements under the hood. With its focus on rendering-related enhancements and new network features, Release 3 clearly has its eye on ►



AW SPECIAL: THE NEW AMIGA GAMES—1



Games Engine

Par Excellence!

CD32, Commodore's 32-bit interactive multimedia player, has hit US shores—and a tide of next-wave game titles is surging in its wake.

By Peter Olafson

As the folks at Sega might say, "Welcome to the next level." After years of ducking the "games machine" tag, Commodore has finally owned up that it makes a pretty damn good game machine after all, and released a dedicated console version of the Amiga.

It's called CD32, and you're going to be hearing a lot about it—not the least within these pages. The technical stuff will have been around the block and back by the time you read this, so I'll keep it brief. CD32 looks like a gray and somewhat elongated version of the Sega Genesis—the main difference being the top-loading CD-ROM where the cartridge slot would be, with the legend "32-bit" emblazoned across its center.

Welcome to the next level indeed. CD32 is both a significant step up for game play on the Amiga and it *is* an Amiga—and a blow against the consoles and piracy that have threatened to erode the Amiga's European base.

Console Features

Internally, it is essentially a rearranged A1200: a Moto rola '020 processor, AGA chip set, and 2MB of chip RAM. New is the double-speed CD-ROM drive; a planar chip, which permits on-the-fly graphic conversions to Amiga bitplanes (which should usher in an era of Wolfenstein 3-D style games); and Kickstart 3.1 in ROM (the .1 principally being adjustments to support the CD-ROM drive).

Otherwise, it is very much a console. No floppy drive. No keyboard. No hard disk. (For saves, it uses 1K of non-volatile RAM, which is likely to mean password systems.) The single controller—broadly similar to that of the Super NES, but shaped more like a pilot's control wheel—has seven buttons and a four-way directional pad. It plugs into the standard Amiga joystick/mouse ports on the machine's left side.

Not to say that expansion isn't a possibility for the future. The screw-down flap at the right rear conceals a good-sized expansion port. Commodore isn't saying much about expansion plans right now beyond the MPEG (Motion Pic- ►

PHOTOGRAH BY EDWARD JUDICE

ture Experts Group) module, which is expected to ship later this fall with a price around $200 and will give CD32 full-motion-video capability. With this option, you'll never know you weren't watching television. Once developers begin to put MPEG to use, you're going to see some unbelievable cinematic effects. In addition, you can play audio CDs, watch CD+G and Video CD movies, and play most CDTV titles. Commodore is also talking about A1200 and A4000 CD-ROM drives that will let you play CD32 games on your AGA machines. CD32 supports CDXL, but Commodore has yet to finalize an agreement to license Kodak CD for the new machine.

The possibilities for CD32 are enormous. Coupling the graphics power of AGA and '020 speed to the vast storage capacity of the CD-ROM and 16-bit stereo audio—with a list price (estimated at $400) on a par with Sega's less-powerful CD system and one substantially less than the $700 projected for the first 3DO-based machine—it has the potential not only to relieve CBM's current cash crunch, but also to put Amiga technology into millions of homes—much as the A500 did in 1987.



The popular Zool character makes its way to CD32.



Flair's Oscar illustrates the promise of CD32.

The US appears a step or two behind Europe in terms of support for this machine, which debuted overseas two months before the machine's introduction in Pasadena in September (for more about the US unveiling, see p. 8). According to Commodore, CD32 will initially be available in "limited quantities" and sold at "strategic areas" in the US before the national push slated for CES in January. (CBM reportedly moved an encouraging 8000 units within days of CD32's release in Europe.)

CBM has gone to the source of its current strength: its powerful European developer network. And that, at least initially, is where the games will come. Europeans have had the specs since last spring, and initial PAL versions shipped in early September. (US developers were conspicuous by their absence from a developer list provided by Commodore.)

Games Lineup

Of course, a machine is only as powerful as the software available to run on it. Technically, there are eight years' worth of sterling Amiga software waiting on the shelf—much of which could be converted to run under the new specs—and a good share of the initial run of games can be expected to be in this vein or straight ports over from the A1200. (For more on A1200 games, see "AGA Attack" on p. 31.). For instance, ***Gremlin Graphics*** is bundling all three of its **Lotus** car-racing games on a single CD. **Mindscape** has a two-pack **TV Sports** offering that includes baseball and boxing games. ***System 3*** reportedly will reissue all three in its Last Ninja series—**Ninja Remix** and **Last Ninjas II** and **III**—for CD32. (For that matter, don't be surprised if Europe's enterprising budget labels use all this extra closet space to put together compilations. The possibilities are mind-boggling.)

But it's early yet, and at this writing (late September), there were just three CD32-specific games available. Two were bundled with the machine in Europe—***Millennium's*** **Diggers** strategy/arcade game and ***Flair's*** platform game **Oscar**—and ***Millennium's*** **James Pond II: Robocod** was in some London shops even before the machine. (At press time, Commodore hadn't indicated what software would be bundled with the machine for its American launch in October.)

Oscar is bound to get attention; it's a lovely bit of sight-seeing. It was first conceived as a follow-up to Trolls II, and, like Trolls AGA, its 256 colors beam out of the screen. It is like virtually nothing you've seen in terms of richness and density of color—both in the background and up front—and while I hankered for a joystick over the controller's directional pad, the game play is there as well.

James Pond II: Robocod was exceptionally well regarded in the platform-game field when it made its initial appearance on the Amiga in 1991, and it has aged pretty well. This version is substantially identical to the A1200 version—which is to say larger, faster, and with just a bit more sparkle in its pictures. Solid stuff.

Diggers is quite different. You use icons to control a team of five Lemming-sized men whom you send off

to dig for jewels (which you can sell). Of course, there are three other races working alongside you...and at odds with you. It's not a quick game—it covers an enormous area—but it seems to have a decent amount of depth and variety, and I found myself drawn back to it again and again. (We'll look at all three in detail in "The Game Preserve" in the not-too-distant future.)

More Games in the Offing

There's more coming—a lot more—and many will be out by the time you read this. In fact, some were set to follow the machine straight into the shops. In September, ***Gremlin Graphics*** was expected to release a CD32 version of its platform hit **Zool**, with a new level, 3-D rendered shots, and a CD soundtrack; ***Renegade*** is releasing a CD32/CDTV version of its well-regarded **Sensible Soccer**; and ***Mindscape International*** plans a version of Jordan "Prince of Persia" Mechner's great isometric puzzle game, **D/Generation**.

Commodore estimates that CD32 will also run about 60 percent of existing CDTV titles—among them the brand-new **Defender of the Crown II**, by renowned Amiga artist Jim Sachs, which is reviewed in this month's "Game Preserve" (p. 80). And we can expect to see a number of compatible latter-day CDTV games that weren't released in that format.

Here's a sampling of other entertainment packages from Amiga game developers you can expect in the coming months.

Bullfrog: You knew the Populous/PowerMonger boys would come through, right? Expect to see a high-powered CD32 version of **Syndicate**—incorporating some new features that will be included in a data disk late this year and others (like the rotatable view and interior cutaways) specific to CD. Other projects farther down the road sound mind-blowing: Reportedly the Bullies are working on a CD32 version of **Theme Park** (an amusement-park construction set); a new underwater first-person God sim called **Creation**; and a flight simulator (for want of a better description) using a magic carpet and inspired by The Arabian Nights.

Flair: The beat-'em-up **Surf Ninjas** and the beautiful graphic adventure **Genesis** are planned, along with versions of the AGA games **1869** (trading in the 19th century) and **Whale's Journey** (futuristic RPG).

Grandslam: The wonderful greens game, **Nick Faldo's Golf**, is on the way—in 256 colors, no less, with voices—and there reportedly will also be a soccer game, **England World Cup '94**.

International Computer Entertainment: *Amiga Format* magazine reports that ICE is doing a game based on the Japanese cartoon Akira. It's said to involve some motor cycle racing, and to have "plenty of blood and gore." Yummy.

Krisalis: **Soccer Kid** and **Sabre Team** are slated to make the transition—the former with improved animation, the latter with extra levels.

MicroProse: Well, uh, it isn't a done deal. An MPS rep in Europe indicated the company hasn't committed to any CD32 projects yet, but is keeping an eye on things. Given past performance, it's likely MPS will join in the fun. (The haunted-house game **The Legacy** is the name most frequently bounced around in the UK gaming press.)

Millennium: The massive third episode in the **James Pond** line—**Operation Starfi5h** (that's not a typo)—and the arcade/puzzle game **Morph** are headed for CD32.

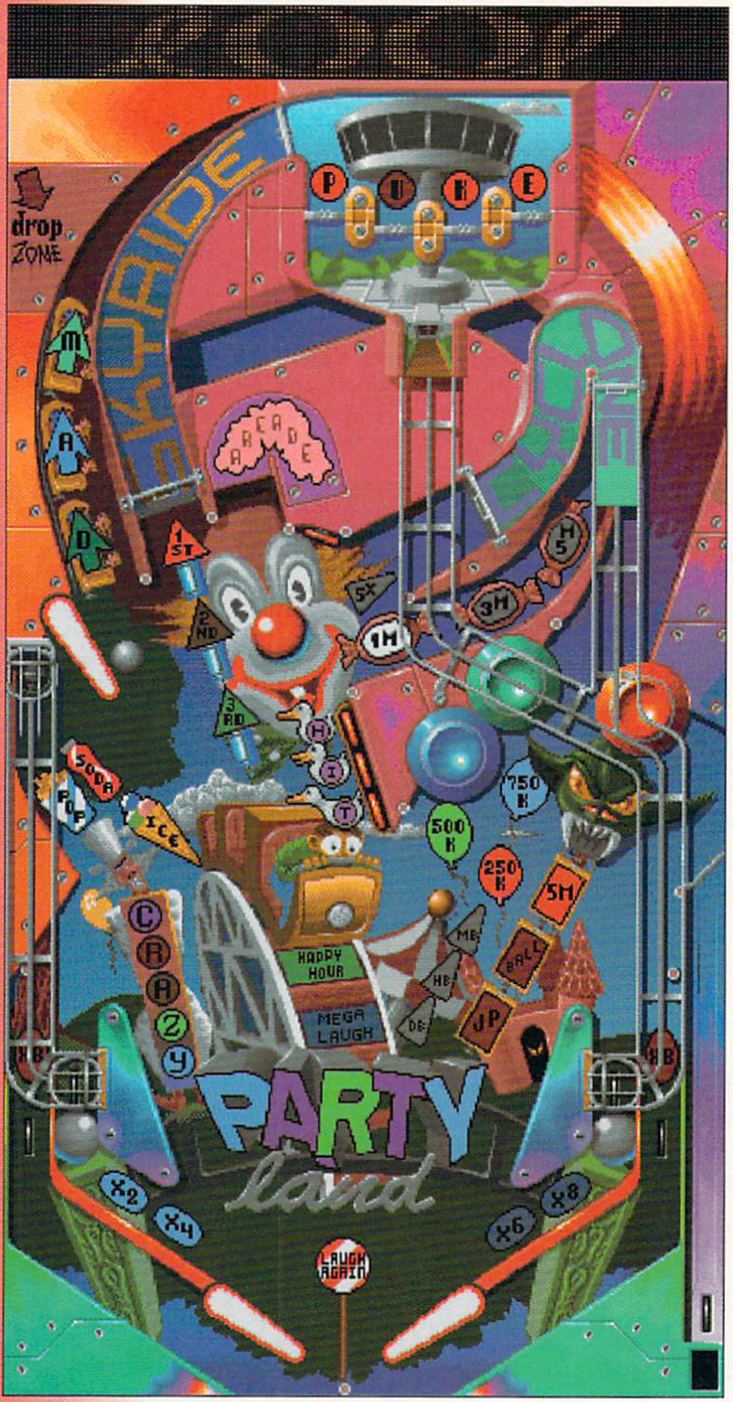
Mindscape: Mindscape and its parent company, Software Toolworks, have long been active in the CD market, so small surprise that it's bringing out four CD32 titles. After TV Sports and D/Generation comes the silly 11-level platform game, **Alfred Chicken**. But the big one is the CD32-only **Liberation**—Tony Crowther's follow-up to the hit futuristic role-player Captive—with 4096 computer-created plots and more than 36,000 ►



It's a matter of time travel in Genesis from Flair.



Bee on the lookout for Storm's Lawnmower Man.



The colorful (about 256) Pinball Fantasies from 21st Century.

possible locations in each of its cities. Plural.

Mirage: I have four words for you: **Rise of the Robots**. This one—headed up by a former Bitmap Brother—could be big; Mirage indicates it's more like a movie than a game. You're a cyborg sent into a robotic manufacturing plant to save it from a super-smart (but virus-infected) robot that has taken over the plant. In the process, you'll fight five types of robots—each with its own AI. The chief robot (The Supervisor) has some moves that make him sound like something nasty out of *Terminator2*. The ray-traced images in the slide show running at the European Computer Trade Show (ECTS) looked great. If the game play measures up, we're all going to be very busy come January.

Ocean: Look for the giant UK label to do versions of **Ryder Cup Golf**, **Sleepwalker**, **Jurassic Park**, along with ***DID's*** flight games **T.F.X.** and **Inferno**.

Psygnosis: You can expect versions of **Microcosm**—a gorgeous first-person shoot-'em-up—and **Dracula**.

Renegade: This outfit will follow Sensible Soccer with the sideways shooter **Uridium 2** and **The Chaos Engine**.

Storm: **The Lawnmower Man**—from appearances, a string of challenging arcade sequences in a 3-D environment—is being developed for CDTV, and a CD32 version, while not definite, is a fair possibility as well.

Supervision: A version of **Donk!**, that neat platformer featuring a samurai duck, is planned.

System 3: Look for **Putty 2** to grace the CD32. Putty was a splendid arcade/puzzle game in very much the same mold as Morph (only prettier and tougher).

Team 17: **Alien Breed 2**, **Body Blows**, and **Body Blows Galactic** are all in line for the CD32. And spokesman Martyn Brown notes that **X2**, the follow-up to the spectacular sideways shooter Project-X, may be CD32-only.

Thalion: There will be a CD32 version of **Ambermoon** (sequel to Amberstar), a massive free-scrolling role-playing game—the second of that type (after Legends of Valour) to reach the Amiga.

21st Century: A 256-color **Pinball Fantasies** is planned for CD32.

US Gold: An enhanced version of the arcade-adventure **Flashback** is a possibility.

Virgin: Like MicroProse, this label's plans seem a bit indeterminate—nothing was formally announced at ECTS—but it's been reported elsewhere that Virgin plans to do a CD32 version of **Dune** with speech and enhancements to the travel scenes. Virgin's Amiga support has always been strong, and it's likely as not that the company will jump in with a project or two.

The question on everyone's lips is whether there is a Sonic or a Super Mario World hiding in this lineup or on the drawing boards—a game that will drop jaws, suspend disbelief, and compel people to buy the machine in order to play it. Well, that remains to be seen, but the games in this initial batch are good, solid offerings that begin to draw on CD32's potential. ■

*Wild-eyed Peter Olafson, **AW's** Games Editor, has recently returned from ECTS, a major UK-based computer games show, where he witnessed much support and excitement for CBM's new interactive game machine.*

Are you game?

Brace yourself for the onslaught

of AGA games just in time

for the holidays. From "Air Bucks"

to "Zool 2," here's a sneak peek

at what's in store for

thrill-seeking Amiga gamers.

AGA Attack



Patience has always been a useful commodity for the devout Amiga gamer. Patience for loading. Patience for installation. Patience for copy protection. Patience for the games that don't appear on time, and patience even for the ones that do. (Patience with gloating IBMers you want to hit with a wrench, for that matter.)

But whoever said "Patience is a virtue" never had an A1200 and a gamer's bloodlust for something hot and deep to populate it.

It's been some wait. At this writing (mid-September), nearly a year has passed since the first A1200s appeared in London's High Street shops, and up until now there hasn't been a single exceptional game available that was designed expressly for AGA (Advanced Graphics Architecture) machines. And there've been fewer than 20 of those.

True enough, we've had plenty of sonic and graphic upgrades of good games conceived for OCS and ECS Amigas. True enough, we're beginning to see the expected trickle of VGA IBM-to-AGA Amiga conversions. And, true enough, even without the flood of AGA-titles, there's a certain pleasure to be had in rediscovering how too-slow flight sims and disk-intensive role-players suddenly seem just fine under an '020.

But that probably wasn't the plan most of us had when we plunked down our money. We wanted games conceived for our hot new 32-bit machine. (Otherwise, it's a little like buying an A500 so you can run a C64 emulator.) And it's a short step from "Patience is a ►

By Peter Olafson

virtue" to "We're mad as hell and we're not going to take it anymore." We've had the salad, we've eaten all the bread, and we've had an animated chat with the folks at the next table. Now, where's the beef?

It's here. With the first full Christmas season since the machine's release just kicking off, we're suddenly on the cusp of a regular flood of A1200 games—flight sims, driving games, platform games, sports games. By the time you read this, you'll be hip deep in the stuff—most of it from Europe, especially the UK—and 1994 appears to hold more of the same. The A1200 is about to come into its own.

In that spirit, here's a buyer's guide to existing and real-soon-now A1200-specific games with not a few previews, first looks, and no-such-luck-pals thrown in for good measure. The last year has been rather dismal and gray—much like England's autumn weather—but the future's looking so bright, I've got to wear X-Specs.

AIR BUCKS 1.2
Impressions

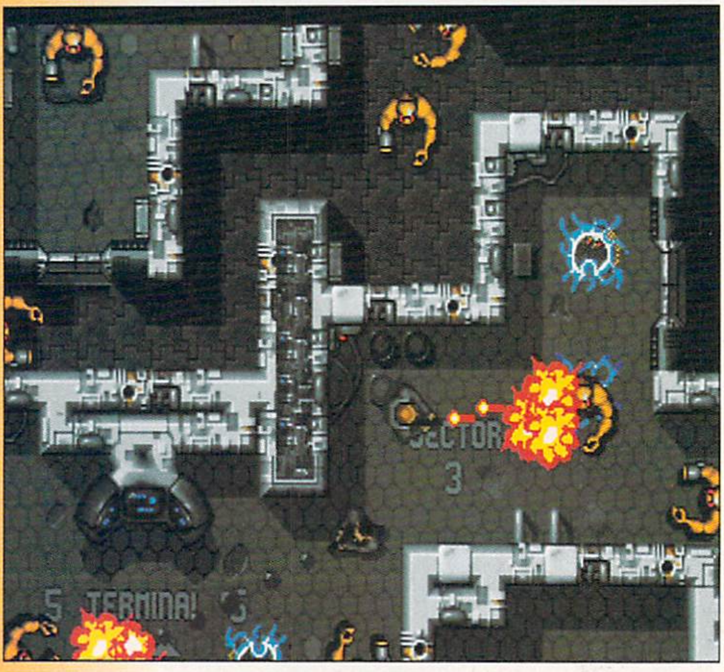
At press time, it appeared this excellent and challenging run-your-own-airline strategy game would be the first AGA game to see formal US release. (It's been available overseas for a while in its initial rendition, but Impressions considered it too slow for release here.) It is, to all intents and purposes, a twin of the IBM VGA version, with more of a head for business than comparable Amiga games like Black Gold and Ports of Call.

ALIEN BREED 2
Team 17

A little introduction may be necessary here, as the original Alien Breed never got much attention in the US. A shame, too: It was essentially an Alien-ish story line transplanted onto a spiffed-up version of the Into the Eagles Nest engine. It was simple enough to appeal to anyone—basically, you were collecting keys, ammo, and dosh to spend on better weapons at the computer consoles—and atmospheric as hell. This new one is as crisp as they come, with fantastic hard-edged graphics and more of everything that made the original such a grabber.

BENEATH A STEEL SKY
Virgin

An improved version of Revolution Software's futuristic follow-up to Lure of the Temptress—a collaboration with Watchmen Comic Book author Dave Gibbons—is planned for the A1200. Called the "first computer-based animated comic-book adventure," Steel Sky is set in a world ruled by corporations (à la Syndicate). They've destroyed the environment—the wasteland outside the huge city-states is known as The Gap—and the game opens with gap-dweller Robert Foster's mysterious arrival in a city.



Alien Breed 2

BODY BLOWS GALACTIC
Team 17

Follow-up to the superb set-piece beat-'em-up Body Blows. Not previewed, but it's apparently an off-planet variation on BB and is said to put two BB characters up against the best fighters of seven alien races, with new moves, better sound, and improved backdrops.

BRUTAL SPORTS FOOTBALL
Millennium

Millennium has been touting this as "Beastball" for some time, and I finally had a chance to take a peek at it at the European Computer Trade Show (ECTS) in September. And Beastball is right: It's enjoyably violent and in its way really quite funny stuff—essentially a barbarous version of US football played out by genetically-engineered monsters. (Remember Grand Monster Slam?) After a game, the field looks as though it's been plowed for planting.

BURNING RUBBER
Ocean

Finally, some competition for Nigel Mansell in the arcade racing genre. This is an Outrun-type arcade racer in the Jaguar/Lotus vein, with a range of cars and scenery, a shop to pick up add-ons, cops on your tail, and pedestrians (if you're not careful) as hood ornaments.

THE CHAOS ENGINE
Renegade

This two-player strategy shooter from the Bitmap Brothers—a Gauntlet with good looks and a brain—is in the pipeline. It's said to make use of 256 colors and to have better sound than the original.

CIVILIZATION
MicroProse

This 256-color version of Sid Meier's strategy classic has actually been out for a while, but only over-

seas and only as part of a hardware bundle (the first external hard disk for the A1200). As I write this, it should finally be out as a solo product—and as pretty or prettier than the VGA original version. (Of course, beauty was never Civ's strong suit anyway.)

Day of the Tentacle
LucasArts

Rumor Quashing Dept: A .DMS archive purporting to be an Amiga demo of this follow-up to Maniac Mansion has been making the rounds of BBSs. However, LucasArts folks swear that nothing of the sort is in the works (though they're still keeping an eye on the Amiga market).

This apparently was someone's idea of a joke.

Dennis
Ocean

Not much info available on Dennis (as in "the Menace"), but it's evidently a license based on the dreadful John Hughes film, and, as it's also planned for the Super NES, I'll lay odds it has a platform or two in it.

Diggers
Millennium

Lemmings as miners, more or less. (Someone ought to get those guys a union.) The CD32 game, in-bound in a trimmed-down version for the A1200, is an interesting composite of game styles: controlling five tiny miners (unless you leave them alone too long, at which time they go off and do their own thing); some managing of resources (they mine for jewels); horning in on three computer opponents; and the broad, simple pleasures of exploring a vast underground.

Donk
Supervision

This platformer from The Hidden development team—featuring a, uh, samurai duck—was called "Dong" in its initial rendition for the sadly defunct DMI label. Needless to say, some stores were not amused and the name was changed to the more accessible Donk. Good thing, as this definitely deserves an audience. It's gorgeous, with big sprites, lots of colors, and a split-screen two-player mode that out-consoles the consoles.

Dungeon Walk
Public Domain

Not a finished game, actually, but an encouraging interactive demo for techniques that will be put to work in one. This AGA-only offering—available via FTP over Internet—is a seminal dungeon crawl with smooth scrolling as you move between squares, occasional cartoony monsters, and continuous on-screen auto-mapping.

1869
Flair

Worthwhile if only because it's different from anything else to reach the 1200: a trading game for up to four players set in...wot the title sez, mate. Trading games can be a bit dull, but this is a notch or two up from standard fare in that it's more a simulation. 1869 appears simple at first, but there's rather more to do than just buy and sell commodities: crews to keep happy, advice to hear, newspapers to read, and so on.

Fatman The Caped Consumer
Interactivision

Delightful platformer in the Superfrog vein from a new Danish developer, it features a chubby main sprite who belts baddies with his big belly (Chuck Rock style) and gobbles tons of munchies. The levels go on forever, and they're packed with cute stuff.

Genesis
Flair

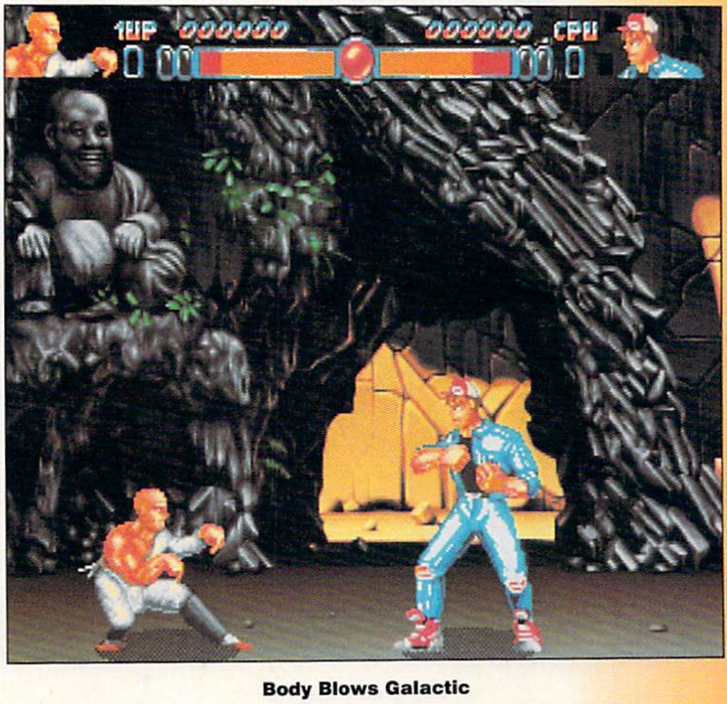
A richly drawn, icon-driven time-travel adventure—the scenes I saw looked as though parts had been digitized from life—featuring a young woman of...well, less-than-extensive wardrobe. (Flair indicates that she'll be better draped in the release version.) It's set in the Jurassic and Medieval eras and winds up in a composite of the present and the future.

Giger-Tetris
Shareware

The second freely distributable AGA game—it's a wonder there haven't been more—is a pretty straight version of the classic falling-block game, with a lovely backdrop drawn from the catalogue of the artist who inspired Dark Seed. What's next, AGA Minesweeper?

Inferno
Ocean

Many of the games here will be out by the time you read this. This one won't be until 1994. This smooth spaceflight simulation from DID apparently began life as a follow-up to Epic—hence the subtitle "The Odyssey Continues"—but the demo I saw at ECTS suggests it's gone well beyond that. Lots of smooth flight and big fights in elaborate environments on seven planets and three moons. The list of features is simply staggering: a vast ►



Body Blows Galactic

environment—planets with light and dark sides, weather, and gravity; a light-sourced cockpit; up to 80 missions in a given game; and 300 or more ships in a battle. 1994? I'm not sure I can wait.

International Open Golf Championship
Ocean

Remember Zany Golf? Well, this here is Ghastly Golf. It just doesn't do very much right. The graphics ache from hunger. The interface is too simple. The promising follow-the-ball view turns out to be simply a pitiful series of slow snapshots (even on a 40 MHz machine). And I especially like the way the movement of the ball follows completion of the swing. I can't go on; it's just too painful. Better golf games were released for mortal Amigas four years ago. And Ocean UK seems to know it, too; they're pulling it and teeing up for the forthcoming Ryder Cup instead.

Ishar
Silmarils

This update to Silmaril's excellent Ishar is the first RPG to be rendered in AGA. Not that it matters much; the original was great with a lovely impression of mist in the distance, a sense throughout of quiet intimidation, assertive characters who resisted being bossed around, and a happy reliance on the player's abilities over such matters as mapping. All that remains in place here, and Ishar's high color is a bit higher. Recommended, and an AGA version of the excellent Ishar II (see this issue's "Game Preserve," p. 88, for a review) is around the corner.

James Pond II: Robocod
Millennium

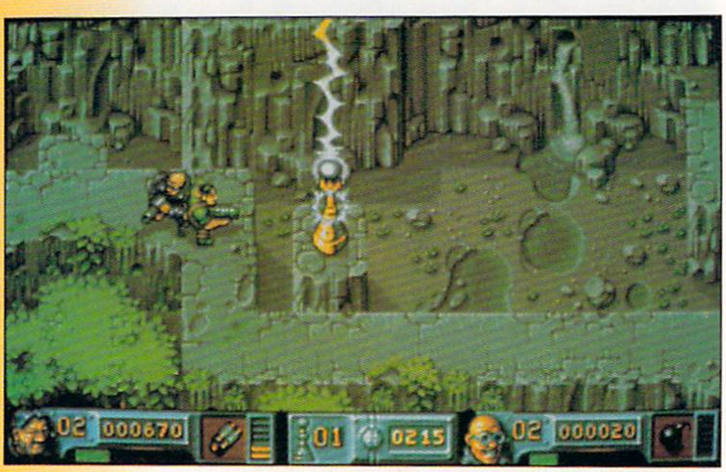
The first of the AGA platform-game conversions to really add anything substantial to the mix, with six new levels, hard-disk installability, and marginally better graphics. (JP was a pretty handsome little cod to begin with.) As fun as ever.

James Pond III: Operation Starfi5h
Millenium

Woody's World (see next month's "Game Preserve") is calling itself the biggest platform game. JP III calls itself the biggest and the best. It has (it says here) more than 140 levels, 24,000 screens, 400 secret rooms or bonuses, a new character (a frog) and the largest JP sprite to date, lots of new gadgets, and all this at twice the speed as Sonic the Hedgehog.

Jurassic Park
Ocean

This may be Ocean's first really worthy licensed game. It has the potential to be a metaphorical Tyrannosaurus Rex among the little Velociraptors of the Amiga game world this Christmas. JP is essentially a composite of two action games: an angled-down Ultima VI-style point-of-view for the out of doors, and a free-scrolling Wolfenstein 3-D blastfest indoors.



The Chaos Engine

King's Quest VI
Sierra

Yup, you read correctly: King's Quest VI. Sierra, which quit the Amiga market last year in the wake of Conquests of the Longbow, has quietly re-entered it with an A1200 (and a standard 32-color Amiga) version of Roberta Williams' latest entry in the saga of Daventry's first family.

It's the first Amiga conversion the company hasn't done itself. (Hurrah! Yippee! Yahoo!) KQ6 was farmed out to England's Revolution Software (developers of the Virtual Theater adventures Lure of the Temptress and the forthcoming Beneath a Steel Sky). The characters in this 32-color version move much more smoothly and quickly than any of Sierra's latter-day Amiga products. The A1200 version should, God willing, look and play substantially the same as the VGA version.

Morph
Millennium

I raved and drooled about this elemental puzzle game—in which you literally wander lonely as a cloud... and an inferno...and a puddle... and a bowling ball—a couple of issues back (see Oct.'93, p.79). It was pretty then, and I can't imagine that they could do much to liven up the graphics. But they *have* added 12 more levels.

Mr. Nutz
Ocean

He's a squirrel with a feisty look on his face. Can't say more. This platformer, once intended for standard Amigas, appeared destined only for the consoles. Maybe the A1200 brought it back to life.

Naughty Ones
Interactivision

A polished, minor-key platform game with cute, squat figures. The graphics in the little demo I played were charming and detailed, and the game play surpisingly addictive. In the final version, there will be more than 50 screens arrayed over five worlds, and a single-screen two-player mode.

Nigel Mansell's World Championship
Gremlin, distributed by EID

The second game to get bumped up to AGA, and a more sensible choice than the two platform games that bracketed it. It loads much faster (the original took forever), handles better, and looks marginally sharper. Word has just reached

me of a *second* AGA version that allegedly features more graphic enhancements.

PINBALL FANTASIES
21st Century

The best pinball game ever to appear on any computer gets bumped up to 256 colors. (Apparently about half of 'em got used on the ball itself, which now looks very realistic.) They've also improved the speed, which I wouldn't have thought possible.

PINBALL ILLUSIONS
21st Century

Still some ways away (like a year), the third release in this series will feature, among other things, the ability to put more than one ball in play simultaneously. Unfortunately, the prosepcts of a construction set aren't looking good.

PRIME MOVER
Psygnosis

Psygnosis makes its move to AGA with, of all things, a motorcycle racing game— the bitmapped kind, à la Super Hang-On. (Not another Red Zone, thank goodness.) I've seen only the standard Amiga version, which was already quite breathtakingly fast.

RALLY
Eurosoft

Remember Lombard Rally? It was a rather good racing game from the late '80s that managed to convey a real sense of being on the road. (Not to mention the sense of vertigo when coming over the crest of hills.) This is a sequel of sorts, and if the artwork and ink I've seen is any indication, it's looking very good.

RYDER CUP
Ocean

All I have on this golf game is a press release, but it sounds promising. You control a team of 12 golfers (12? I can barely manage one) competing for the cup under tournament rules. The graphics are supposed to be realistic—"you can almost smell the grass"—and use Gourad shading. And the folks at Ocean say it's better than International Open Golf.

SABRE TEAM
Krisalis

Another interesting choice for the AGA treatment. This game—an angled-down variation on games like Breach II and Special Forces—came out last year in a standard Amiga version that was intriguing in concept, but, unfortunately, burdened with an awkward control system that made it hell to play. This new version has better graphics and, since the 1200 version will take off from the IBM, it will also inherit the simplified, sensible controls.

SIMLIFE
Mindscape International

The first game to make its initial appearance in an AGA version. Budding geneticists: This will save you a lot of money on lab equipment. SimCity fans: Wait for SimFarm.

SLEEPWALKER
Ocean

Get this whichever machine you have. It's a wonderful game—faithful dog protecting sleepwalking master from the hazards of a cityscape-cum-platform game—but I have to admit it's an odd choice for conversion. What was done —a few extra colors, mainly—didn't change much. (It's slightly smoother and faster.)

SOCCER KID
Krisalis

A great arcade-adventure, using the same engine as the excellent Arabian Nights, that puts me in mind of Sleepwalker. (You can manipulate your soccer ball to get to places you can't.) No specifics, but the 1200 version will probably look and sound a bit better—not that it needs to.

STAR TREK: 25TH ANNIVERSARY
Interplay

Ah, finally! I hear this is getting bumped up to the AGA treatment. It's a multicharacter graphic adventure that captures perfectly the charming flavor of the series—something Interplay's always been good at—mingled with smooth space-combat sequences. This should be dazzling.

SURF NINJAS
Flair

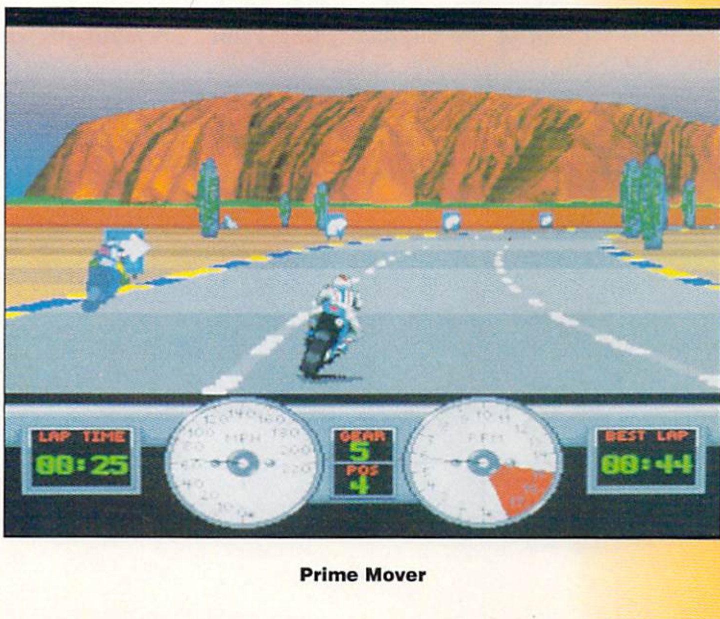
I don't know much about this, I'm afraid. A beat-'em-up—progressive, rather than set-piece—apparently based on the movie of the same name.

SURVIVAL
Interactivision

Nothing after the apocalypse should look this pretty. It's a large-ish strategy game, set in Europe and the US, in which your object is to unify the survivors of World War III and rebuild civilization. That requires building, transport, some sort of military (not everyone's as friendly as you are), and new technology to bring it off.

SYNDICATE
Electronic Arts

Not! The announced A1200 version of Bullfrog's dark strategy game was to feature a rotatable point-of-view and cutaway shots of ►



Prime Mover

the interior of buildings—the latter a decided improvement over the pin-the-tail-on-the-donkey routine used in the standard Amiga game. Alas, it's not to be; they're doing it for the CD32 instead (see "Games Engine—Par Excellence!" on p.26).

T.F.X.
Ocean

If you can't wait for Inferno, this may tide you over. It's from the same outfit, and is a follow-up, of sorts, to DID's flight simulator F-29 Retaliator. It features F-29's silken flight, an amazing level of ground detail, eight theaters, a choice of three aircraft, and around 200 missions. And the polygons don't look much like polygons any more.

Transarctica
Silmarils

The original Transarctica left me a bit chilly, and 224 additional warm colors in the AGA version haven't nudged up the thermostat a bit. This futuristic strategy game—based around a giant train roaming an icy post-nuclear world in search of the sun—has a lot of nice internal toys, but needs more help in the boredom department than with its palette. (Watching a little choo-choo chugging around a liquid-paper landscape just doesn't set my blood to boiling.)

Trolls
Flair

This will remind you right off the bat of the bundled CD32 game, Oscar, and well it should, for Oscar started life as Trolls II. Its precursor is probably the best of the A1200 pure platformers: absurd characters with perpetual grimaces and Don King hair, lovely shading and detail throughout, and above-average game play. Trolls AGA really begins to exploit the power of the machine. I can tell because my mouth is still hanging open.

UChess, v. 2.31
Public Domain

The first AGA game in the public domain looks great, plays a wonderfully aggressive game, and keeps getting better—as author Roger Uzun (of Heart of the Dragon fame) seems committed to regular upgrades. But don't even bother looking for this unless you have buckets and buckets of extra memory.

Uridium II
Renegade

Back in eight-bit days, Uridium was one of *the* sideways-scrolling shoot-'em-ups on the C64. Uridium II, from Fire & Ice author Andrew Braybrook is bound to be hailed as one of *the* sideways scrollers for the Amiga. The standard version will rip along at 50 frames per second, and the A1200 version will throw in extra sampled sound and graphics and something called "a mayhem mode."

Whale's Journey
Flair

A futuristic role-playing game, Whale's Journey is fat with data (on seven floppies), and there's a fair amount to do (choosing the parents in the character-creation stage is a real hoot!), but I found the story line a bit too thin. I'm still exploring it, though, and you may want to give it a look for yourself.



Rally

Wing Commander
Electronic Arts UK

A long story with (apparently) a happy ending. Wing Commander Amiga received a generally warm reception when it appeared a year ago, but complaints about its speed on low-end machines and limited palette made it a natural candidate for A1200dom.

First that was a go: Mindscape International was planning to follow up WC with a 256-color version. Then it was postponed, as Mindscape's conversion contract lapsed and Electronic Arts acquired WC publisher Origin. And now it's a go again, under the auspices of EA, and, at this writing, was planned for October release overseas. Reports indicate that pre-release versions are looking very tasty. Now, where are those Secret Missions disks?

Zool
Gremlin Graphics, distributed by EID

This conversion of the heavily-hyped platform game was first of its kind in late 1992, and so is bound to be thought of with a certain lingering affection—perhaps lingering longer than was its due. The A1200 version has more music and new background graphics that tend to obscure the baddies and make an already tough-ish game all the tougher.

Zool 2
Gremlin

The game play apparently is pretty much the same, but the new Zool is otherwise much bigger and more varied. He's acquired a girlfriend (Zooz), a two-headed dog (Zoon), and a host of new enemies for this most recent trek through nine large levels (which can be completed via different routes depending on which character you select). Time limits have been stiffened to spice up the challenge, and Zool himself has been given some new abilities. Of course, I haven't actually *played* it much yet, but patience, eh? Review coming. ■

Peter Olafson writes AW's monthly game section, "The Game Preserve."

THE

ALL-TIME AMIGA GAME HITS

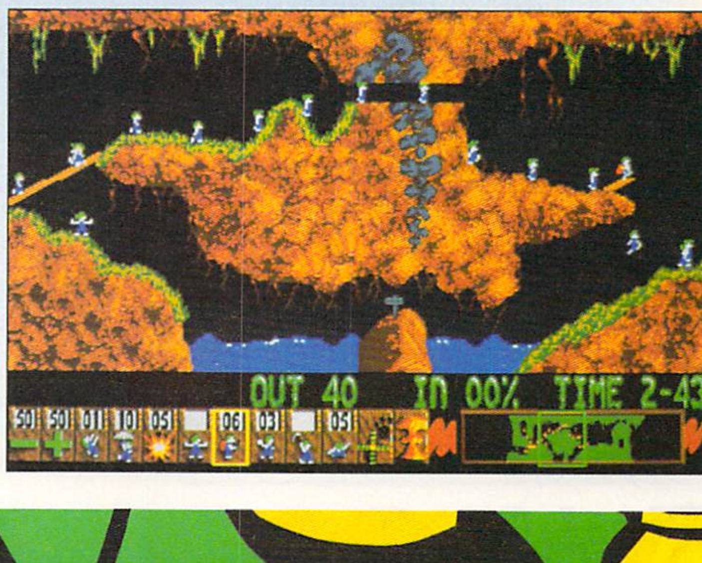
By Tom Malcom

YOU SAW, YOU played, and you voted. And vote you did! After bulldozing our way through some four thousand ballots in the first-ever Player's Choice Awards, we came up with your "Top 5" favorite Amiga games of all time—plus an "Honor Roll" of the ten next most popular titles. In addition, one lucky reader took down a brand-new Amiga 1200 in the Player's Choice Contest Grand Prize drawing (see profile on p. 38).

Since the Amiga debuted nearly a decade ago, there have been so many excellent games and entertainments written for it that picking the best of the best can only be accomplished by a general consensus like this one. While your own personal list will almost certainly be different, we hope you feel proud at being a part of the selection process—and *AW* wishes to thank each and every one of you for participating. So, starting from the top, here are the "Player's Choice" winners:

1. LEMMINGS
Psygnosis

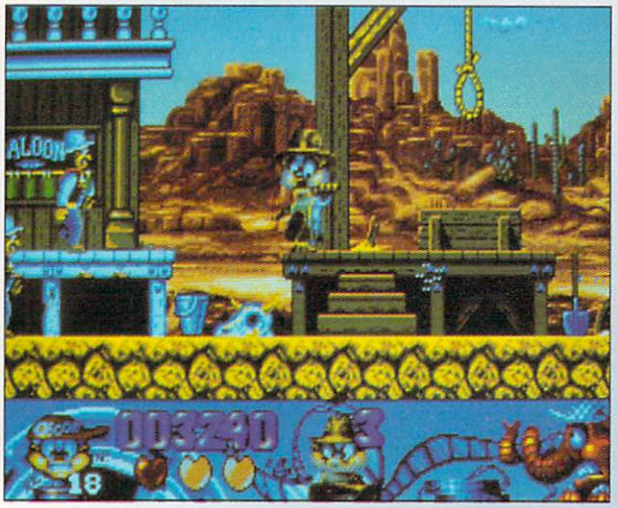
Lemmings is the game that made Psygnosis a superstar in game publishing. It struck just the right blend of arcade and puzzle gaming and gave us the most engagingly cute characters ever seen in a computer game. Saving lemmings from themselves quickly became an obsession with Amiga owners who had never even played a computer game before. Above all, the game had personality and charmed the socks off everyone who played it; Lemmings is deservedly at the top of the list. ►



2. SimCity

Maxis

With SimCity, Maxis brought system simulations out of the realm of computer theory and into the world of computer entertainment. Laying out cities and keeping their resi-

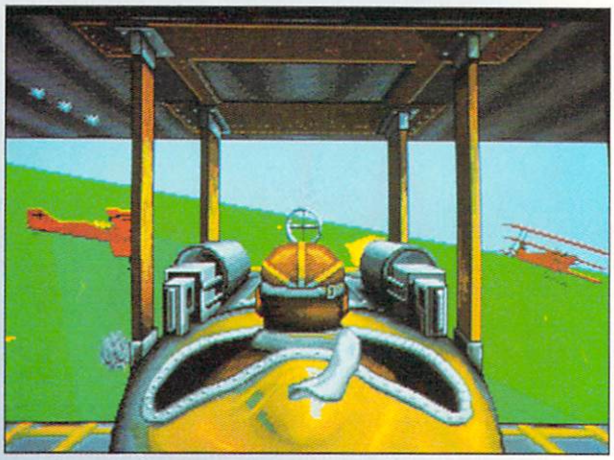


dent sims happy made SimCity more fun than an ant farm (and inevitably led to another Maxis success, SimAnt). And who could resist the perfect whimsy of being able to turn Godzilla loose to stomp into rubble the city you worked so hard to make? SimCity is so well done that, not surprisingly, it has become a serious tool for teaching city planning. Now, who would have ever thought that something like city planning could be this much fun?

3. Wings

Cinemaware

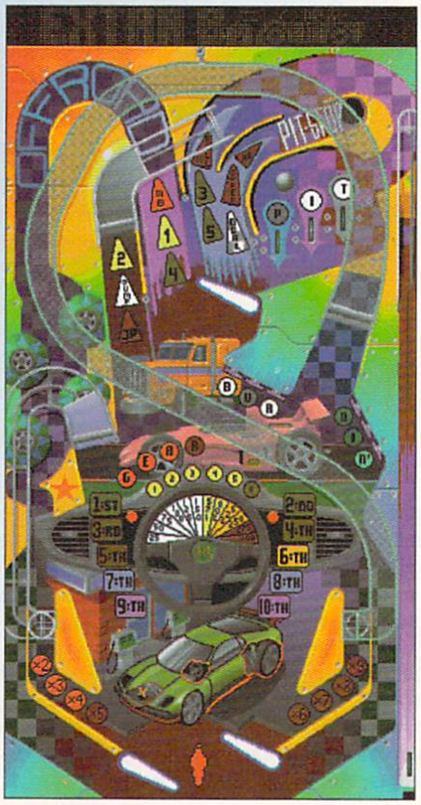
Arguably Cinemaware's best effort, Wings let us be World War I flying aces and gave us the chance to be heroes. Within the trademark movie framework, Cinemaware also cre-



ated a first-class flight simulator that redefined the genre, making it accessible to game players who weren't willing to learn the complex controls of traditional flight sims. Like Cinemaware's other games, Wings was true to its cinematic origins and captured the essence of the movies it drew from while translating that essense into a highly playable computer game.

4. Pinball Fantasies

21st Century



If you have ever shoved a quarter into an actual pinball machine, you must have loved Pinball Fantasies. Easily the best computer pinball game ever done on any platform, Pinball Fantasies provided superior play on a choice of four equally smashing tables. Excellent graphics, perfect sound, flawless physics, and, most of all, the accurate cap- ►

And the Winner Is . . .

AMIGAWORLD IS PLEASED to announce the winner of its Player's Choice contest. He is **Tim Hurley**, 20, of Roselle, NJ, who will receive an Amiga 1200 computer as the Grand Prize. Tim's entry was selected from among those of thousands of *AmigaWorld* readers who cast their ballots for their favorite games.

A current A500 owner, Tim uses his system for a variety of applications, including computer art, animation, music, and telecommunications. Anxious to maximize the capabilities of his prize machine, Tim plans to outfit the A1200 with a hard drive and other accessories. But most of all, he can't wait to enter the exciting world of AGA games. He lists Lemmings, Prince of Persia, and Dragon's Lair as among his all-time favorites.

Congratulations, Tim, and good luck with your new machine.We would like to extend our appreciation to all of our readers who entered the contest. And our special thanks to TechMedia Publishing's Liz Abbott who put in countless hours tabulating your votes. □

—DB

The World's First Multi-Platform Emulation System!

EMPLANT™

EMPLANT is a hardware/software product that is designed to allow the emulation of virtually any computer using the Amiga. A simple software driver and ROM(s) from the computer to be emulated are all that is required! Custom programmable logic allows the EMPLANT hardware to actually become the exact hardware of the computer it is emulating. Multiple emulation modules can be run at the same time using a single EMPLANT board!



EMPLANT running *Adobe Photoshop* in full color!

Full color MAC IIx emulation!

Support for up to 16 colors is provided for non-AGA machines. A4000 owners can use a full 256 colors! Support for the Retina Video board allows you to have a **16 million color** Macintosh! Utilities Unlimited,Inc. is working closely with other video board manufacturers to provide support for their video products, such as: The Resolver, Firecracker, EGS, Domino, Rainbow II/III, Merlin and many more! Support for AMAX formatted floppys and hard drive partitions, MAC hard drives, SyQuest cartridges, AmigaDOS devices (RAD, VD0, DH0, etc.), and MAC floppys (requires SYBIL hardware, sold seperately) is provided with easy to use setup menus.

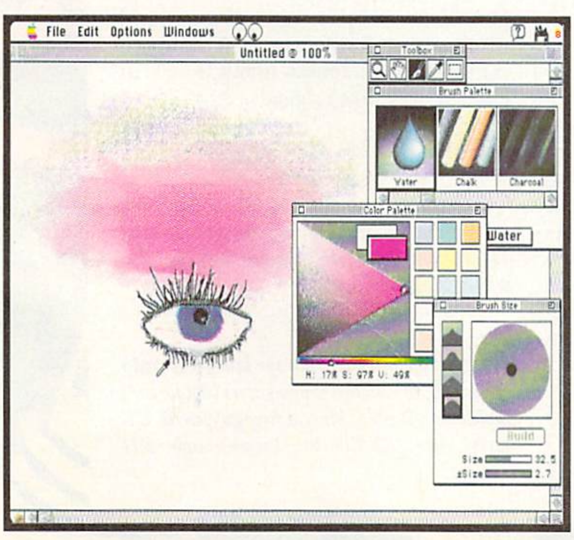
They said it could never be done ...

Like ALL of the emulation modules that will be released for use with the EMPLANT hardware, the MAC IIx emulation module **MULTITASKS** with the Amiga's operating system! You can simply pull down or flip screens and get back to the Amiga side! ...and the MAC stays running at full speed! Speaking of speed...A 25Mhz A3000 runs the MAC IIx emulation exactly twice as fast as a real MAC IIx! Just imagine the speed of an '040 Amiga! The emulation runs ALL known MAC programs, and in FULL color, (if the program supports color)...and all while **MULTITASKING** with the Amiga!! (MAC IIx emulation module *requires* an accelerated Amiga - 68020 or 68030/68040 w/MMU) and 256K MAC ROMs (not provided). Not all emulation modules will require accelerated machines. Four megabytes of memory is recommended for use with System 7.

Future emulations...

Since the EMPLANT's hardware is so versatile, a completely new and different computer can be emulated by just changing the emulation software patch and the ROM(s). MAC QUADRA, Mega ST, IBM AT (386/486), C64/128, Atari 400/800, and even game machine (Genesis/SNES) emulators are planned in the near future.

Utilities Unlimited, Inc, offers four different EMPLANT versions: BASIC EMPLANT system, OPTION 'A' - BASIC EMPLANT system with dual high speed serial ports/AppleTalk support, OPTION 'B' - BASIC EMPLANT system with high speed SCSI interface, and DELUXE - BASIC EMPLANT system with both dual high speed serial ports/AppleTalk support AND high speed SCSI interface.



EMPLANT running *Fractal Painter* in full color!

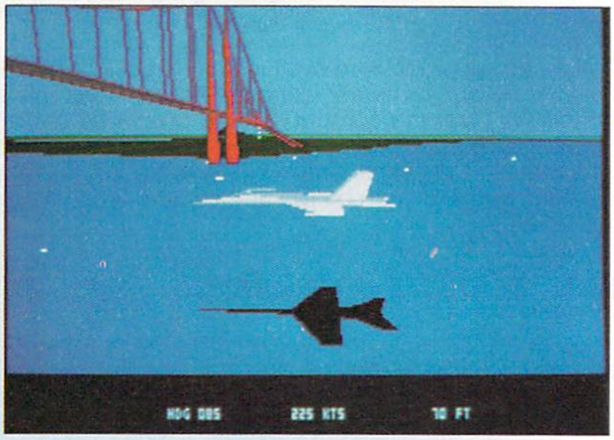
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OPTION 'B' EMPLANT system - $349.95
DELUXE EMPLANT - $399.95
SYBIL Hardware - $99.95

Please add $10.00 for shipping and handling (all orders are shipped via UPS Blue label). C.O.D. Fee - $5.00.
All EMPLANT packages described above come with MAC IIx emulation software and necessary device drivers. ROM(s) are not shipped with this product. Sources available upon request. Dealer inquiries welcome! Foreign dealers welcome!

Utilities Unlimited, Inc.

1641McCulloch Blvd. Suite #25-124
Lake Havasu City, AZ 86403
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turing of the feel of playing pinball all combined to make Pinball Fantasies a must for every Amiga gamer's collection.



5. FA-18 Interceptor

Electronic Arts

In the overcrowded flight-simulator market, FA-18 Interceptor remains a standout. Realism, speed, and more realism gave Interceptor its edge. Flying a fighter like this isn't an easy thing to do, and learning the enormously complicated controls required considerable time and commitment. The rewards, however, amply repaid the effort with some of the most exhilarating flight and frantic aerial battles ever seen on an Amiga monitor screen.

. . . And 10 More for the Honor Roll!

6. Out of this World
Interplay

A lot of jaws dropped when Interplay released Out of This World. Previously, polygon-based graphics didn't have much in the way of visual interest. OOTW changed all of that: Using close-ups, pans, fades, and the other techniques films use to catch and retain our interest, this otherwise basic arcade-type graphic adventure was a grabber from the first. Besides being a fast-paced killer arcade adventure, it also gave us a glimpse of the direction virtual-reality adventures are likely to take.

7. Civilization
MicroProse

Sid Meier's Civilization gave us the chance to not just read about history and culture, but to shape and guide it ourselves. The distant, dusty past suddenly came very much alive, and along with providing an enormously entertaining way to waste a few millennia in front of the computer, the game succeeded in the more subtle task of showing us how our civilization came to be what it is.

8. Dungeon Master
Software Heaven

Before Dungeon Master, fantasy and role-playing games were, for the most part, remote-controlled affairs with overhead views and interfaces more concerned with statistics than playability. Dungeon Master, however, slapped us in the face with a first-person viewpoint and dungeon adventuring the way it was meant to be done: up front, personal, and very dangerous. And Dungeon Master was tough: Endless hours of telecommunications time were spent looking for help to get through sticky spots and discussing the merits of the game. Dungeon Master remains the prototypical underground graphic adventure.

9. Populous
Electronic Arts

Who could resist being a god? Certainly none of the thousands who played Populous. It gave everyone the chance to help nurture his or her favorite tribe of mortals while raining destruction and devastation on its enemies. Bullfrog struck a basic human chord with the theme of Populous and did it with a technical brilliance that set a new standard in the process. Graphics, sound, animation, and a powerfully sophisticated interface were combined to perfection in a game that was far more than the sum of its parts.

10. Wing Commander
Origin

Probably the most popular IBM game ever, the Amiga version of Wing Commander proved to be just as compelling. A mission-based outer space entertainment, Wing Commander was one of those rare games where winning or losing is secondary to the experience of playing. Wing Commander was endlessly involving, in large part because it placed more emphasis on skill than on chance.

11. Eye of the Beholder
Electronic Arts

Eye of the Beholder was an evolutionary step forward in fantasy/role-playing games—not to mention an enormous success for SSI—and upped the standard for both graphics and interface.

12. Shadow of the Beast II
Psygnosis

One of Psygnosis' very finest, Shadow of the Beast II was a stunner—awesome not only for its graphics, but also for its not-quite-impossible gameplay.

13. Pirates
MicroProse

Caribbean swashbuckling combined with elements of arcade gaming, conquest, and high-seas derring-do made Pirates a must-have for every would-be Errol Flynn.

14. Monkey Island II
LucasArts

Attention to detail, a sense of humor, and a "hyperscreen" point-and-click approach to gameplay let Monkey Island II far outshine its namesake original.

15. Gods
Konami

Undoubtedly the Bitmap Brothers' best creation yet, Gods showed that classic fast-paced British arcade gaming still had the ability to dazzle us. ■

Tom Malcom, an editor for the late-great **.info** *magazine, covered the Amiga games beat for that publication. Write to him c/o* **AmigaWorld**, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

The Spin Doctors



Amiga Hard-Drive Controllers

*Part 2**

Dr. K is back in residence again with more test results and advice—this time to help low-end Amiga users speed up hard-drive access and increase overall system performance.

**Editor's Note: Last month, we covered the high-end Amiga systems (A2000, 3000, 4000). Here in the second and final installment of the series, we'll present controllers for the A500, 1000, 1200, and CDTV.*

EXCEPT FOR THE just-announced CD32, every Amiga model ever made has current options for hard-drive control expansion—even though the oldest has been out of production for six years! The Amiga 1000, discontinued in 1987, still has one dedicated hard-drive controller on the market (a version of Xetec's Fasttrak), and at least two others are adaptable to it. Plenty of peripherals are still available for the popular Amiga 500, which was discontinued more recently. There's even a SCSI adapter made specifically for Commodore's CDTV, a system that never sold well.

The market for the Amiga 1200, on the other hand, is new and growing. We tested two SCSI controllers for the A1200, and received notification of more. Before we get into descriptions of the products, though, let's check the medical history of hard-drive control for these machines.

Prepping the Patient

Last month, the first installment of this series covered some basic groundwork about hard drives, cable connections, interface standards, and other conventions. While we will recap briefly some of this information here, refer to Part 1 (Nov. '93, p. 49) for a more detailed discussion.

As with the higher-end Amiga systems, there are two types of hard drives from which to choose: SCSI (Small Computer System Interface) and IDE (Intelligent Device Electronics). IDE drives are well supported in the IBM PC market and are marginally less expensive. In an effort to cut A1200 costs to the bone, Commodore built an IDE interface into that machine. IDE drives, however, have several drawbacks when compared to SCSI drives: generally slower data-transfer speeds, more limited expansion options, and a very restrictive cable length (about two feet). In addition, SCSI devices are not limited to hard drives (you can add CD-ROM drives, tape drives, optical drives, scanners, and so on), and the SCSI bus also allows the networking of systems in order to share some of those expensive peripherals.

Assembling your own expansion peripherals requires some basic skills (if you are unsure, have a dealer do the job). To install a hard drive you must be able to handle the components and hook up the appropriate cables. Static electricity can damage electronic components. Always discharge your body by touching the metallic parts of the computer's main chassis. For the Amiga 500, the internal radiation shield is a good place to start. Avoid touching the active components of the circuit boards and disk drives. Try to handle chips by their ends while avoiding the protruding contacts. For peripherals that do not include hard-drive enclosures, such as the ones designed for the Amiga 1200, you will ►

By Morton A. Kevelson

ILLUSTRATED BY COURTNEY GRANNER

also have to provide an enclosure, power supply, and interconnecting cable for the external drive.

A little knowledge of the physical dimensions of hard drives is also helpful. The dimensions of older disk-drive modules corresponded to the original 5.25-inch floppy drives supplied with the IBM PC—although these were later replaced by half-height models. You may be able to find SCSI peripherals of this type for very attractive prices. Keep in mind, though, that these are usually older models whose speed and capacity are much less than the current crop of 3.5-inch drives, many of which are low-profile units only one inch high. Recently, 2.5-inch drives—originally developed for laptop computers—have entered the scene, and even smaller drives are starting to appear as the size of portable computers continues to shrink. In general, drives smaller than the 3.5-inch models sell for a higher cost per unit capacity. (Note that the dimensions refer to the diameter of the magnetic platters that are built into the drives and not to their external dimensions.)

All the systems I examined come with easy-to-use drive-preparation and set-up software. After partitioning and formatting the drives, I used the AmigaDOS 2.0+ installer program to install the operating-system software. Note that CDTV still uses AmigaDOS 1.3.

13 Hard-Drive Controllers

Feature summaries for 13 hard-drive interfaces for low-end Amigas are grouped by the Amiga model(s) for which they are intended. Within each group, cards are presented alphabetically by the name of the de-

Hard-Drive Controller Benchmark Test Results

Performance tests for all SCSI controllers were run with a Quantum LPS525S hard drive, a fast SCSI-2 device with an average seek time of only ten milliseconds. (SCSI-TV for CDTV was the exception; it was tested with an older Quantum ProDrive 40S.) Likewise, I tested all IDE controllers with a Seagate ST351A/X drive. Host adapters that control SCSI and IDE devices were tested with both drives.

You'll notice two sets of figures for the A500 controllers. I tested these systems first with the basic Amiga (results shown on the left) and then with Supra's SupraTurbo28 68000 processor accelerator (figure on right). I have not included separate results for Xetec's Fasttrak on the the A1000; performance should be the same as on the A500.

Keep in mind that many factors can affect the results of these tests, and that you won't always get faster results with a more powerful system under certain conditions. But while it is difficult to interpret these numbers directly, they can give you a basis for comparison.

SysInfo 3.14

Testing system read speeds.
All values represent multiples of 1000 bytes per second.

HOST ADAPTER	MANUFACTURER	SCSI	IDE
A500			
DataFlyer 500	Expansion Systems	505/655	698/988
DataFlyer Express	Expansion Systems	503/648	687/956
A500-HD8+	GVP	2125/2178	
*AdIDE 2	ICD		446/**
Trifecta 500	ICD	2891/2891	607/**
SupraDrive 500XP	Supra	649/930	
*Fasttrak	Xetec	503/527	
A1200			
Twelve Gauge	CSA	880	
SCSI/RAM+	GVP	2209	
CDTV			
*SCSI-TV[1]	AmiTrix	716	

MKSoft's DiskSpeed 4.2

Testing directory manipulation speed.
All values represent number of files per second.

HOST ADAPTER	MANUFACTURER	CREATE	OPEN	DIR. SCAN	DELETE	SEEK/READ
A500 with SCSI						
DataFlyer 500	Expansion Systems	18/23	46/66	139/197	71/113	62/68
DataFlyer Express	Expansion Systems	18/25	46/79	141/254	73/144	59/76
A500-HD8+	GVP	18/27	45/72	106/153	62/116	63/83
Trifecta 500	ICD	36/81	52/114	168/329	78/180	55/73
SupraDrive 500XP	Supra	20/24	47/85	133/271	77/152	57/77
*Fasttrak	Xetec	22/26	45/70	119/165	68/101	72/87

veloper. Benchmark-test comparisons of ten of the cards can be found in the accompanying sidebar. For information on contacting the individual developers, consult the "Manufacturers'/Distributors' Addresses" list on p. 100.

AMIGA 500 / AMIGA 1000

Expansion Systems

Expansion Systems contributed two products for the A500 category: DataFlyer 500 and DataFlyer Express. **DataFlyer 500** (available in three versions: SCSI only, $189.95; IDE only, $179.95; SCSI/IDE, $239.95) features a newly redesigned, all-metal enclosure that matches the profile and contours of the A500. The case lacks a power-indicating LED, but it does have a hard-drive-activity LED. When installed, DataFlyer 500's case adds nearly six inches to the overall width of the system. Its design is modular, which keeps down the initial cost by letting you add features as you need them. Inside the enclosure there is a single Amiga 2000-style 100-pin expansion slot. The basic system is built around the DataFlyer host adapter for the A2000, which has both SCSI and IDE connectors.

An optional memory board piggy-backs onto a 100-pin header on the drive interface card. The eight sockets on the memory board accept either 256K or 1MB SIMMs. The possible memory configurations are 512K, or 1, 2, 4, or 8MB. Both the hard-drive interface and the memory card can be removed and installed in an Amiga 2000. The internal mounting plate accepts either a 3.5-inch half-height or 2.5-inch hard drive. An optional power ►

HOST ADAPTER	MANUFACTURER	CREATE	OPEN	DIR. SCAN	DELETE	SEEK/READ
A500 with IDE						
DataFlyer 500	Expansion Systems	9/11	37/48	134/277	71/137	44/49
DataFlyer Express	Expansion Systems	10/11	38/48	136/223	64/105	43/49
*AdIDE 2	ICD	31/**	45/**	145/**	62/**	29/**
Trifecta 500	ICD	29/**	48/**	145/**	70/**	33/**
A1200						
Twelve Gauge	CSA	33	172	374	321	119
SCSI/RAM+	GVP	61	107	255	194	104
CDTV						
*SCSI-TV[1]	AmiTrix	7	26	67	14	34

MKSoft's DiskSpeed 4.2

Measures file create, write, and read speeds.

Testing with a 262,144-byte, MEMF_FAST, LONG-aligned buffer. All values represent multiples of 1000 bytes per second.

HOST ADAPTER	MANUFACTURER	CREATE	WRITE	READ
A500 with SCSI				
DataFlyer 500	Expansion Systems	202/389	216/417	481/631
DataFlyer Express	Expansion Systems	199/379	214/404	473/610
A500-HD8+	GVP	1114/1314	1765/1632	1584/1739
Trifecta 500	ICD	1311/1875	2176/2190	2233/2348
SupraDrive 500XP	Supra	493/743	622/845	608/851
*Fasttrak	Xetec	514/577	631/668	605/641
A500 with IDE				
DataFlyer 500	Expansion Systems	357/394	452/455	763/799
DataFlyer Express	Expansion Systems	367/394	451/455	763/799
*AdIDE 2	ICD	288/**	335/**	461/**
Trifecta 500	ICD	393/**	472/**	733/**
A1200				
Twelve Gauge	CSA	822	936	851
SCSI/RAM+	GVP	1244	1798	1886
CDTV				
*SCSI-TV[1]	AmiTrix	177	329	516

[1] Tested with an older Quantum ProDrive 40S SCSI hard drive.

* System was tested with 1MB of chip RAM only; the availability of fast RAM generally improves controller performance.

** Host adapter not compatible with SupraTurbo 28.

supply can be installed inside the case. Connection to external SCSI peripherals is via an optional DB25 SCSI connector that mounts on the back of the case.

DataFlyer Express (also available in three versions: SCSI only, $275.95; IDE only, $259.95; SCSI/IDE, $329.95) integrates all of DataFlyer 500's expansion functions onto a single board. Its metal enclosure matches the profile and contours of the Amiga 500 while adding less than five inches to the overall width of the system. The main circuit board, however, is an A500-only card and cannot be transplanted to an A2000. The top of the case has both drive-activity and power LEDs. Both SCSI and IDE connectors and cables are included with the system.

A low-profile, 2.5- or 3.5-inch drive can be installed on the internal mounting bracket; half-height devices will not fit in the enclosure. A DB25 connector for external SCSI devices is mounted on the rear panel, which also sports an A500-compatible external power connector if you have a spare Amiga 500 power supply. Eight sockets accept either 256K or 1MB SIMM modules; possible memory configurations are 512K, or 1, 2, 4, 6, or 8MB.

GVP

GVP's **A500-HD8+** ($399 with an 80MB hard drive) and **A530 Turbo** ($599 with 80MB drive and 1MB RAM) are housed in plastic cases that match the profile and styling of the A500 and add about 5.5 inches to its width when installed on the side. Underneath their exteriors, both are mounted on all-metal chassis with sufficient shielding to meet FCC requirements. Inside, there is space for a low-profile, 3.5-inch SCSI drive. An internal "mini-slot" connector accepts such GVP peripherals as the GVP/PC286 16MHz IBM PC/AT emulator. Connection to external SCSI peripherals is via a DB25 connector on the back of the case. Both systems come with an external "brick" type power supply.

The internal hard drives GVP provides with these systems have AmigaDOS installed. The first time you power up your GVP system, the drive identifies the Kickstart ROM in the computer and automatically configures the hard drive with that version of AmigaDOS.

The A500-HD8+ is a combination SCSI host adapter and RAM expander. The four sockets on the main circuit board accept either1MB or 4MB SIMMs for a total of 2, 4, or 8MB of RAM. The sloping front panel of the A500-HD8+ sports a pair of power and drive-activity LEDs, and a game switch that disables the hard drive but does not affect the expansion RAM.

The A530 Turbo combines a SCSI adapter, RAM expander, and 40 MHz 68EC030 accelerator. The main board has a socket for an optional 40 MHz 68882 math coprocessor (for speeding math-intensive operations). Two sockets on the main board accept either 1 or 4MB 32-bit SIMMs for totals of 1, 2, 4, or 8MB of RAM. The unit's sloping front panel provides three lights to indicate power, drive activity, and processor status. It also offers a turbo switch, which disables the accelerator, hard drive, and RAM, leaving the A500 sans expansion.

GVP units apparently can sense certain system defects and limitations and reconfigure themselves to operate at reduced performance. This is apparently what happened when I conducted the speed trials for the A530 Turbo, which is why it is not included in the table. Normally, says GVP, you'll get faster speeds with the Turbo than with the HC8+.

ICD

ICD provided two products, AdIDE 2 and Trifecta 500 LX, for our review. **AdIDE 2** ($79.95) is probably the smallest Amiga hard-drive interface ever made. It is also the only A500 host adapter that does not plug onto the side of the machine.To install AdIDE 2, open the computer's case, remove the internal shield cover, and extract the 68000 processor and plug it into AdIDE 2. You then insert AdIDE 2 into the socket vacated by the 68000. The installation violates Commodore's warranty, but as A500 production has been discontinued, this should not be of concern. The system is completed by installing either a 2.5-inch or 3.5-inch hard drive inside the computer.

It is possible to attach an external hard drive, but you must figure out how to run the cable (remember: IDE cable is limited to about two feet). Installation of an internal 3.5-inch drive requires the Prima Mounting Kit ($29.95), which includes ICD's Shuffle Board. Shuffle Board lets you replace the A500's internal floppy drive with a hard drive, and designates an external floppy drive as df0:. Installing an internal 2.5-inch drive requires the Novia Mounting Kit ($14.95)—a three-legged bracket that sits on the A500's motherboard.

AdIDE 2 precludes the use of external processor replacements on the expansion bus. For example, the system would not work with SupraTurbo 28. Internal processor replacements can be installed, but they must be stacked atop the AdIDE 2—thus vertical clearance inside the computer's case becomes a limiting factor. AdIDE 2 also obstructs the adjacent Kickstart ROM socket, which in my case necessitated removal of a ROM switching device. With some minor soldering, the A500's floppy-drive LED can be adapted to indicate hard-drive as well as floppy-drive activity.

Although it is possible to install AdIDE 2 in an Amiga 2000, it was really intended for the A500. AdIDE 2 can also be adapted for the Amiga 1000 and CDTV.

The design of the **Trifecta 500 LX** ($179.95) is essentially the same as that of the Amiga 2000 version presented last month in Part 1.Trifecta 500 is housed in a plastic case with a metal chassis that matches the color and profile of the A500. The case is about a half-inch taller than the computer at its highest point. Removing a single screw at the back of the case lets you flip the plastic lid and expose the main circuit board.

The LX version I used can interface to both SCSI and IDE hard drives, and 44-pin IDE and 50-pin SCSI connectors are provided. (Trifecta 500 EC, a lower-cost IDE-only version, was recently discontinued but can be upgraded to full LX functionality through the installation of two chips.) There is space to mount either a 3.5-inch or 2.5-inch hard drive directly on the board (an adapter cable is needed for 2.5-inch drives). The mounting holes extend through the underlying chassis, simplifying the installation. Trifecta 500 also has a single internal 100-pin expansion bus that is electrically similar to that of the Amiga 2000. Future accessories may be developed to connect to this bus.

The system comes with its own "brick" type power supply. On-board jumpers let you choose between computer power or external power. Connection to external SCSI devices is via a 25-pin "D" connector on the back panel, which also sports a pair of miniature toggle switches that disable the hard drive and ex-

pansion RAM. You can add RAM to Trifecta 500 by installing up to 16 1MBx4 ZIP chips in its sockets; possible memory configurations are 2, 4, 6, or 8MB.

Supra

SupraDrive 500XP ($499.95 with a 120MB drive) is a combination SCSI host adapter and RAM expander. The all-metal enclosure matches the color and profile of the A500, although it is set back about three inches from the front of the computer and extends about an inch and a half behind. When installed, it adds about 4.5 inches to the width of the system.

The XP provides an A500 bus-passthrough connector for adding other peripherals to its left. The back panel sports a DB25 SCSI connector, a switch to disable the hard drive, and a jack for an optional external power supply—although the computer itself supplied power for the unit I used. The right side panel provides miniature DIP switches for setting the SCSI ID for the internal drive and disabling the RAM.

Inside SupraDrive 500XP there is space for a 3.5-inch, half-height drive and up to 8MB of RAM. The memory sockets accept either 256Kx4 or 1MBx4 DRAM DIPs. The available memory configurations are 512K, or 1, 2, 4, or 8 MB of fast RAM. The package includes easy-to-use installation-and-set-up software, as well as a backup utility. (Systems purchased with bundled drives have the set-up software preinstalled.) When the system is powered up, it will check the computer's Kickstart ROM and then let you automatically modify the startup-sequence accordingly.

Xetec

Xetec's **Fasttrak** ($175) SCSI adapter for the A500/A1000 is housed in a brick-shaped, all-metal enclosure 9 inches deep and 1.75 inches high; it adds about 3.75 inches to the width of the Amiga 500. One corner of the case projects above the sloping portion of the A500's keyboard. The basic system houses a SCSI adapter that is similar to Xetec's MiniFast card for the Amiga 2000. Fasttrack accepts the optional Xetec FastRam RAM card, which has four sockets for 256K, or 1 or 4MB SIMMs. (Its possible memory configurations are 512K, 1, 2, 4, or 8MB.) Fasttrak's enclosure leaves no room for a hard drive or other SCSI devices. Instead, the drive must be housed in and powered from a separate external enclosure.

Fasttrak comes with Xetec's SCSI-MAC adapter, which is a DB25-to-50-pin ribbon cable, a six-foot DB25-terminated cable, and an eight-inch length of 50-pin flat-ribbon SCSI cable. All SCSI devices attach to the DB25 connector on Fasttrak's back panel. Fasttrak also sports a bus-pass through connector; however, the dimensions of the opening surrounding the passthrough are less than Amiga standard. Some peripherals, such as SupraTurbo 28, will not fit through the opening.

The Amiga 1000 version of Fasttrak is a mirror image of the A500 version, with an attached bracket that elevates it to the height of the A1000 bus port.

Xetec's set-up-and-installation software is a bit cumbersome, as separate utilities format and partition the drive. When used with Kickstart 1.3, the boot partition must be formatted with the old file-system software. Fasttrak can boot from a FastFileSystem partition when used with Kickstart 2.04.

Editor's note: At press time, ***AmiTrix*** announced an option for owners of Commodore's A570 CD-ROM drive for the Amiga 500. **SCSI-TV570** adds a SCSI interface to the A570's rear expansion port.

AMIGA 1200

CSA

The CSA **Twelve Gauge** (from $699) is designed to offer as many basic enhancements (memory, data storage, and processing power) on a single "belly board" (for the A1200's underside expansion slot) as possible. Twelve Gauge achieves its high-performance density via a multilayer board and surface-mounted components on both sides of the board. The top of the board—the side facing up *after* installation—sports a single 72-pin SIMM socket that accepts 1, 2, 4, 8, 16, or 32MB of 32-bit dynamic RAM. (Given Twelve Gauge's speed, a 60-nanosecond or faster DRAM SIMM is a must.) The lower side holds a 50 MHz 68030 chip. (A lower-cost version based on the 33 MHz 68030 is also available starting at $599.) The board I tested had an optional 50 MHz 68882 math coprocessor, autoboot ROM, and 4MB of 32-bit RAM.

Last, but not least for the purpose of this article, the board supplies a SCSI host adapter. It includes a short ribbon cable and a DB25 connector that installs in the knock-out port on the A1200's back panel. The cable and connector are small enough to thread through without opening the computer, and installing Twelve Gauge's host adapter does not violate the computer's warranty. In the Sysinfo 3.14 benchmarks (see table), the system clocked in very impressively at 7.2 times the speed of the basic Amiga 1200. It was, however, not nearly as fast as some other systems I tested. CSA mentioned that customers have asked for faster SCSI speeds, and plans to provide an upgrade that should nearly double the speeds we got (it may be available by the time you read this).

The computational power of this board generates substantial heat. While I have not run any long-term checks, I assume CSA considered Twelve Gauge's power consumption and heat generation in designing it.

GVP

GVP's **SCSI/RAM+** (from $249) also fits into the Amiga 1200's belly-board slot. It features a SCSI-2 host adapter (for an internal 2.5-inch drive), an optional 68882 math coprocessor, and a pair of 32-bit SIMM sockets that accommodate up to 8MB of RAM. The board I tested had 4MB of 32-bit RAM, a 33 MHz 68882 math coprocessor, and 4MB of 32-bit fast RAM. The possible RAM expansion options are 1, 2, 4, or 8MB. If you use a PCMCIA RAM card (for the credit-card slot on the A1200's side), SCSI/RAM+ is limited to 4MB of 32-bit RAM.

You can add a SCSI drive internally or externally, but either way, you must open the computer, which voids the warranty. The board comes with a 40-pin header and a short matching ribbon cable. If you want a larger, external drive, the SCSI/RAM+ SCSI kit (formerly optional at $60 but now bundled with the card) provides a longer cable and a DB25 connector that installs in the knock-out port on the computer's rear panel. You must provide your own case and power supply for external drives. ►

Editor's Note: Two developers have announced other drive adapters for the A1200, but neither was available in time for this article. ***Expansion Systems'*** **DataFlyer 1200s** is a SCSI controller for the company's Baseboard 1208 multifunction board (RAM, coprocessor, and clock); the **DataFlyer XDS Expansion Drive System** will accommodate both IDE and SCSI devices. ***ICD's*** **Viper S2**, designed for use with ICD's Viper 1230 accelerator/RAM/coprocessor/clock combo provides internal and external SCSI-2 connectors.

CDTV

AmiTrix Development

SCSI-TV ($150) is a compact SCSI host adapter that fits into the expansion port on CDTV's rear panel. Simply remove the port's cover plate, slide SCSI-TV into place, and secure the assembly using screws included in the package. The unit extends about two inches out the back of the system and includes a toggle switch to disable the host adapter. Connection to external SCSI devices is via a DB25 plug on the back.

The circuit board is large enough to accommodate a 2.5-inch drive inside the enclosure. The system provides both a 50-pin SCSI connector and a four-pin power jack for internal installations. An optional DT-327S installation kit ($16 separately; $10 when purchased at the same time as the adapter) includes cables and an adapter for the high-density connector used on 2.5-inch drives. To set up and format a hard drive with SCSI-TV, you also need an external floppy drive and a compatible keyboard. (A "real" mouse is also helpful.) Once SCSI-TV is set up, you can boot CDTV from a hard drive or from its built-in CD-ROM drive.

Recommendations

All of these systems do the job for which they were designed. For the Amiga 500, ICD's Trifecta 500 is the clear winner in terms of performance; it also offers the greatest expansion for the least cost. GVP's A500-HD8+ runs a close second in both areas, and the A530 Turbo lets you add as much power as possible (accelerator included) without opening the computer. Xetec's Fasttrak is the choice if space next to the computer is a problem, and if it's IDE control you want, the DataFlyer units give the best results.

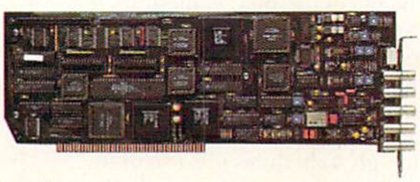
The two A1200 products cater to different needs: CSA's Twelve Gauge wins on computational prowess, while GVP's SCSI/RAM+ runs ahead in terms of SCSI performance. Check your requirements and your pocketbook, and, especially with the single-slot A1200, consider future needs before you buy! ■

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ACCENT ON GRAPHICS

Adjust Your Paintings With Morphs

58

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

AS TIME GOES by, I find myself using morphing software more and more as an experimental graphics laboratory. Rather than seeking the literal transition between two objects, I find myself using morphs for image development during the painting process. To try this yourself, use Imagemaster (Black Belt), ImageFX (GVP), or MorphPlus (ASDG) with your own pictures and see if this column gives you ideas for some experiments.

One technique you might try is to bracket a painting's form and structure almost as a photographer brackets an image with a series of different exposures. As the photographer can then choose an image with preferred tones and values, so can the Amiga artist select an image from a sequence that has the most interesting form and structure. This is a process of strategic discovery and planned accidents. The artist envisions and creates the limits to a form or composition, then the software generates intermediate variations from which to choose. This can be a fascinating collaboration and is effective on both abstract and representational images.

I particularly like the results of morphing between paintings done in airbrush or "spatter" modes as shown in the accompanying illustration. The irregular dither in these images seems to lend itself to effective morphs. The upper inset shows the original painting, while the lower inset reveals the painting that was created as a destination limit to modify the original. The main idea was to explore shorter faces, more cat-like in nature, than the original. The large image that comprises the rest of the illustration shows a resulting midpoint mutation I liked between the two images.

Strategic Morphing

Remember that in this case the second image was painted specifically to modify the first. In creating it, I devoted more strategic thinking to the face than to the rest of the image. I drew the eyes of the second painting in about the same screen position as those of the original image because eyes are such a focus of attention in any portrait. The less they need to move during a morph, the crisper they remain. Not much attention to position was required in painting the remaining facial features, other than being aware of the approximate orientation of the figure. What you should strive to create in your own experiments are extreme features that go beyond the alteration you envision for your original image. The point of the morph is to give yourself incremental adjustments of your image—laced I would hope with some inspiring surprises.

I set up my morph points at predictable spots: eyes, nose, outline of mouth, chin, cheeks, and the contours of the face. Face contours were connected as edges to tighten the integrity of that transition. On the body, a few value details were steered toward each other as is evident in the distortions on the large image, but most of that area was left to simply undergo a transparency shift—letting elements of the second image gradually fade over elements of the first. Sometimes it is most interesting to simply see what happens when parts of two compositions affect each other without any real plan. In this image, I used a straight zero-to-maximum transparency curve, although sometimes it is useful to eliminate transparency transitions and just warp the original image toward a destination.

For this experiment, I specified a nine-frame morph and, to save rendering time, stipulated that only frames 4, 5, and 6 be rendered. That was the region of mutation that interested me. If you want more subtle increments of change, specify a 20- or 30-frame morph, but still render only a few frames from the range that interests

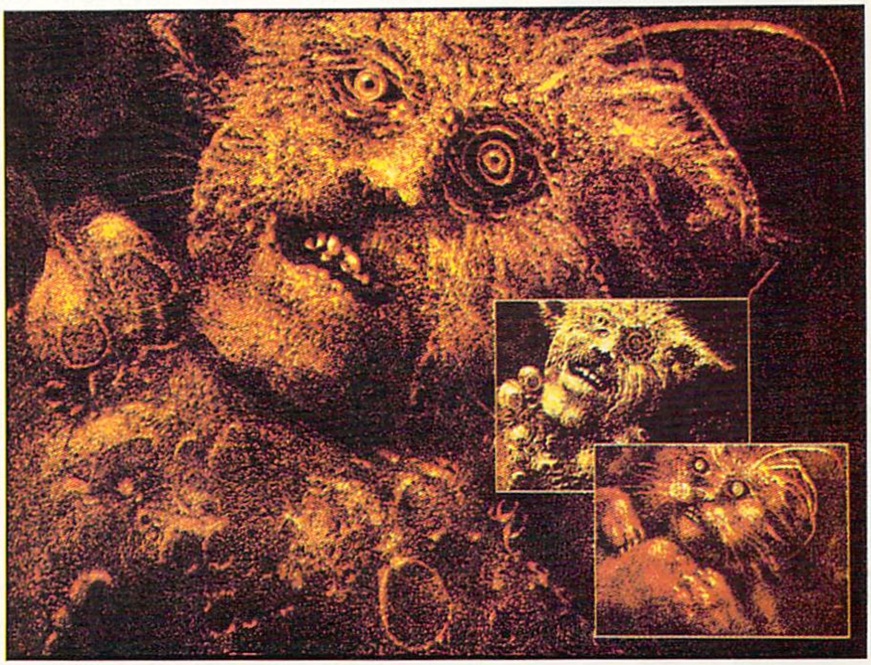
Instead of morphing sheerly for the sake of the effect, make your morph transformations an organic part of the painting process itself.

you. The morph is untouched for this illustration, but in reality it would be a starting point for a finished painting. I like the basic change in the face and what happened around the ears. The scraggly teeth were a nice surprise and are ripe for minor enhancement. The detail in the body area suggests a new direction that would never have occurred to me without the planned accidents of the morph.

FURTHER EXPERIMENTATION

Another experiment you might try is to morph between a photograph and a painting or drawing. I have had some real success scanning a photographic portrait and a charcoal drawing of a face and following the same morph procedure mentioned above. With a zero-to-maximum transparency curve, there are frames in the middle of a sequence that have a very unusual quality, somewhat realistic yet retaining the character and simplification of the charcoal drawing. I would say the most successful of these are in grayscale or some other monochromatic palette. All three morph programs function well in 24-bit color space, but I find that color can sometimes create distracting areas in morphs of this sort that do not appear in grayscale.

I also created a "generic" charcoal face and am currently experimenting with morphing it to a variety of photographic portraits. My success rate so far is about 50-50 in terms of what I consider to be interesting results. Another experiment I am trying involves a full screen of random gray noise, a homogenous dither of pixels of all values. This is then warped toward the features in a photograph. I am having only limited success with this one, but some results are tantalizing enough that I am not giving up on the concept. There are so many ways that origin points can be organized on a variety of homogenous planes that I don't want to quit until I have exhausted my ideas. I am beginning to try random clumps of values rather than uniform homogeneity in the source screen. This follows the cluster theory of probability and may be a better starting point. Perhaps you will have greater success, seeing lines of thought that have eluded me.



Morphing software was used to strategically create an image intermediate between the two paintings shown in the small insets.

In any event, I am continually drawn to these wonderful morphing programs as creative tools of exploration and discovery. If you haven't tried them yet, I strongly recommend that you add them to your set of graphics tools. Set aside any preconceptions about morphs and experiment. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.



Making Your Toaster Cook-1

Toaster-specific products can make your hot video board even hotter...and they're in abundant supply.

By Paulo de Andrade

IT'S TRUE, NEWTEK'S Video Toaster has revolutionized video. But the Toaster by itself is not a solution to all problems, and so a market has grown up around NewTek's card. There are all manner of products that happen to work well with the Toaster, but some are designed specifically to improve the card's performance. We've rounded up a few such products and, for the next two months, will discuss how they can help you.

Next month we'll examine hardware and hardware/software combination products designed for use with the Toaster. But we'll start things off now by looking at some Toaster software utilities. These are programs that offer better image manipulation, better character generation, more effects, better organization, professional-quality audio, and more.

AD516 Toaster Handler

$249, ***SunRize Industries***

SunRize's AD516 board and Studio 16 software does for audio what the Toaster does for video. It allows you to record and play up to eight CD-quality audio tracks directly to and from your Amiga's hard disk. And the board's SMPTE interface lets you sync your soundtrack to your video precisely. It also lets you mix down all eight tracks into two for stereo sound.

To integrate this system with the Toaster, SunRize released the AD516 Toaster Handler. It enables you to sync Toaster transitions to the board's audio. The only problem is that the Toaster software takes over the Amiga, thereby limiting audio playback to two simultaneous tracks. You can overcome this by mixing multiple tracks into two in advance or by doing more complex audio work after the video edits.

Another interesting use for this handler is in automated cable TV situations, where a Toaster is used to display Framestores while Studio 16 plays music. I recommend this setup to anyone who is serious about audio and suffers limitations imposed by a VTR's limited audio channels.

Art Department Pro 2.3

$295, *ASDG*

The familiar Art Department Professional is better than ever now that it can load and save Framestores. This allows you to easily manipulate Toaster images using any of ADPro's operators. It also lets you convert between several file formats.

But the Toaster fun doesn't stop there. You can grab an image using the Toaster directly from ADPro, manipulate it, and then send it back. Or you can simply display an image directly on the Toaster's framebuffers. This feature is particularly useful because it lets you conserve space by saving Framestores as JPEG files. Then, when you need to use the images again, just use ADPro to load the JPEG files and send them directly to the framebuffers.

Auto Paint

$89.95, ***A+ Development***

This program works in conjunction with Toaster Paint to let you create nice pages with beveled boxes of various shapes, with or without shadows. Each box can have an image, and the background can also be a separate screen. Auto Paint comes with several templates to help you create that fancy look you have been wanting for your CG pages.

A+ Development also includes a few utilities: Frame Management lets you delete and renumber Framestores, while Flash Directories lets you assign keys F1 to F5 to different directories so you can easily find the Framestore you need.

Montage

$499.95, ***InnoVision Technologies***

If you want your character-generator pages to look like those you see on TV, look no further. Montage is by far the best looking CG for the Amiga. It uses scalable fonts, multiple transparency levels, positionable text blocks, several colors and text attributes per line, and an amazing one-nanosecond font resolution. Even if you are using the Toaster's new CG (Toaster 3.0/4000), you will find Montage superior. It even comes with software drivers that improve the Toaster's output. Its text scroll is very smooth, and you can easily import or export text to or from any word processor.

When Montage is installed, a new button appears on the Toaster switcher screen. Clicking it transports you directly to Montage's CG screen. Unlike the Toaster CG, you work in color with Montage, doing away with guesswork; you don't need to preview as often to find out what the pages will look like. Montage has several great features, including embossed and beveled text and soft shadows. You can also assign text attributes to function keys for easy recall.

I would like to be able to completely replace the Toaster CG with Montage, ►

but unfortunately I cannot. Montage lacks features that even earlier versions of the Toaster CG have, such as text crawl and the ability to rotate text. These abilities would make Montage absolutely perfect for the Toaster, but even as it is, nothing on the Amiga compares in quality.

The Toaster Toolkit 2.0

$179.95, ***The Byte Factory/DevWare***

This excellent utilities package offers features similar to those of ASDG's T-Rexx. One I particularly like is MacroFX, which lets you run an Amiga program or a script by clicking on a Toaster Crouton.

The Toaster Toolkit is an indispensable tool for any serious Toaster user.

T-Rexx Professional 2

$249, ***ASDG***

This amazing package allows you to do so many things that you wonder how you managed without it.

ASDG divided the software into several modules, according to function. The T-Rexx Pro module lets you create presentations that run automatically, similar to what can be done with The Deli. Framestore FM catalogs your Framestores and displays them in thumbnail format on either the Amiga screen or the Toaster's framebuffers. It also enables you to compress Framestores to save valuable hard-disk space.

"The Toaster by itself is not a solution to all problems."

A Project Editor lets you create your own effects banks, so you can discard the effects you never use or create banks of those you use most frequently. Other modules do things like create custom Toaster wipes, convert Framestores to IFFs and vice versa, and organize Toaster files in a variety of ways.

This program is another must for serious Toaster producers.

While this is a good sampling of Toaster-specific utility programs, there are more on the way. For instance, ***DevWare*** is promising a system called **The Scene Machine**, comprising several modules that offer various Toaster utilities. The first module, **Crouton Tools** ($79.95), allows you to integrate such programs as ADPro, Bars&Pipes Pro, ImageFX, and AmiLink and Personal SFC software into your Toaster's working environment, where you can activate them with a mouse click. Future modules will let you create storyboards, log tapes, and so on.

Although ***Byrd's Eye Software*** has discontinued its ToastMaster product, that company, too, promises new Toaster utilities. **Toaster F/X** and **Toaster Vision** should be shipping by the time you read this.

Come on back next month to discover other products that can make your Toaster productions cook! ■

Paulo de Andrade is president of Kinema Graphics, an Amiga-based broadcast-video and 3-D animation company in Seattle.

REVIEWS *From p.23.*

CygnusEd Professional 3.5

***ASDG*, $119.95; upgrade from V3: $35**

Hard-drive installable.
Not copy protected.
1.3/2.0/3.0/AGA compatible.
Accelerator compatible.
Minimum system: 512K RAM.
Recommended system: 512K RAM.

Powerful, option-laden text editor.

Even the lousiest text editor is like a cashmere sweater when compared to the typist's equivalent of a hairshirt—an old Underwood typewriter. But while that old manual clacker is no match for its computer-driven offspring, neither are all text editors created equal. The best are borderline word processors that let you concentrate on your writing, not what you're writing with. The worst are saddled with obscure UNIX-like commands or the sluggishness and quirks of AmigaDOS's Ed text editor. ASDG's latest solution is CygnusED Professional (CEDPro) 3.5. This text editor packs the power, speed, and flexibility that writers, programmers, and hobbyists alike will appreciate.

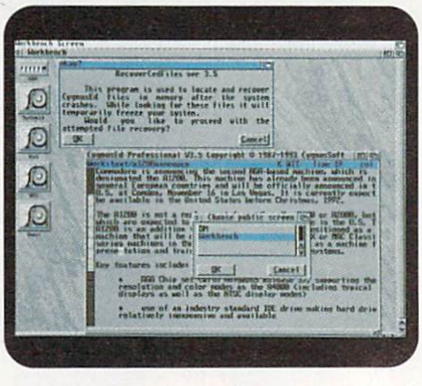
A Constellation Revised

CEDPro has long been a favorite with Amiga programmers, and its latest version doesn't feel like an old program with new features slapped on top. Although it's still compatible with AmigaDOS 1.3, it now sports slick 2.0/3.0 features such as public screens, standard file and font requesters, and full support for both ECS and AGA screen modes.

Setup is a snap, thanks to ASDG's use of a standard CBM Installer program. CEDPro consists of four programs: CED, the editor itself; Ed, a tiny program that loads or activates CED; MetaMac, a new CED macro editor; and RecoverCEDFiles, a disaster-recovery utility.

CEDPro's biggest advantage has always been speed, and the new features in version 3.5 make it dramatically faster than any text editor I've tried on any platform. Custom blitter-based screen-scrolling routines let you whisk through your documents even on unaccelerated machines. CEDPro took only five seconds to replace 28,600 occurrences of a string in a 400K file on an A4000/040. By comparison, Oxxi's TurboText took 25 seconds, and the AmigaDOS 3.0 version of Ed took almost 13 minutes!

The Search mechanism has a new history feature that lets the cursor keys move through a list of 20 previous search-and-replace strings—no more retyping of complicated expressions. You can use wildcards in your searches and select case- and whole-word-sensitive searches. You can even paste the clipboard contents into the Search buffer, effectively avoiding even more typing.



Free-flowing text with CygnusEd Pro 3.5.

Safety Net

CEDPro's automatic timed-save feature makes it hard to lose important work. Whereas previous versions made you acknowledge a requester at save time, this feature is now truly automatic. ►

CEDPro now performs safe saves, where the original file isn't deleted until the new version is safely on disk. CEDPro can automatically keep a backup of your previous version, although it won't keep multiple levels of backups, a feature many programmers find handy if they need to examine a section of code from six saves ago.

If your system crashes before you save a file, the RecoverCEDFiles utility searches through memory for lost text and allows you to save it to disk. CEDPro also protects you from your own mistakes—a size-adjustable Undo buffer lets you perform hundreds of Undo operations, memory permitting.

CEDPro has both recordable macros and ARexx support. Unlike previous releases, you can edit recorded macros using the new MetaMac utility. You can also now automate requester entries, so your macros won't grind to a halt when a search requester pops up. ARexx support has been beefed up with new commands and an easier-to-use Status facility, and compatibility with macros written for previous releases is excellent, so you won't have any trouble using the vast array of earlier macros. Most compilers, such as SAS/C 6.1, include ARexx macros for interfacing with CEDPro.

When you load a file with an extension (.c or .doc, for example), CEDPro searches for a configuration file with that extension. This makes it easy to have different sets of macros and screen configurations for various programming languages or editing jobs. You can have many different configuration files active simultaneously.

CEDPro allows you to open multiple views on one document, or open up to 30 documents in each running copy. Support for the 2.1/3.0 ScreenModes requester means ECS and AGA owners can use modes like SuperHires or Super72 for larger views. And CEDPro 3.5 not only can make its own screen public, but it can open on—or move to—any other public screen as well.

Among other improvements are system clipboard support, localization (English and German, so far), AmigaDOS wildcard support when loading files, the ability to match C language comment delimiters along with other brackets, and better conformance to the Amiga User Interface Style Guide. And you get all this is in addition to the features that made earlier versions of CED popular, such as easy mouse-based screen scrolling, freeform layout modes, powerful block and column operations, one of the most complete manuals around, and the ability to leave CEDPro in memory for instant activation with a hot-key.

Polished Product

Finding fault with this program isn't easy, but the Ed activator utility should have a different name so that it doesn't overwrite the system-standard Ed editor, which you may want to keep around. Although the keyboard equivalents are more Style Guide-compliant this time around, some remain nonstandard (Amiga-S is almost always Save in Amiga applications, but here it's Search). And there is no file requester for choosing individual ARexx macros.

These are minor complaints, however. CEDPro has always been a very good text editor. Release 3.5 is nearly the perfect expression of what a text editor should be, and should make even the most demanding writers and programmers happy.

—Denny Atkin

TVPaint 2.0 Professional

***Distributed by MacroSystems US;* $599.95 (Retina version); $799.95 (Multiple version)**

A2000, A3000, A4000.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Minimum system: 24-bit graphics board, VGA monitor, accelerator, 8MB RAM.
Recommended system: Same as minimum system.
Installation: Moderately easy.

Paint program with 24-bit graphics support.

Amiga standard graphics reigned supreme until PC-compatible makers released 256-color VGA graphics. Caught unaware, it took Amiga developers a few years to produce a multitude of highly functional 24-bit Amiga graphics boards. But powerful graphics hardware is nothing without powerful software, so that was the next step in restoring the Amiga's position as leader of the graphics pack. TVPaint is the latest entry in a new breed of 24-bit paint programs.

Color TV

TVPaint Professional 2.0 is a versatile package designed for use with a variety of display cards. It works with the Retina (MacroSystems), AVideo (INOVAtronics), Resolver (DMI), Harlequin (ACS / Haitex), Impact Vision 24 (GVP), Rambrandt (Progressive Peripherals), and Visiona (MicroPace) boards. It can even be used in conjunction with NewTek's Video Toaster. Distributed by MacroSystems US, it's no accident that TVPaint makes that company's 24-bit Retina card shine, as it easily creates breathtaking graphics on the Retina in 16 million colors.

This feature-rich, genuinely non-standard paint environment loads and saves 24-bit images in a variety of formats, including JPEG and Delta compression, and uncompressed formats such as ILBM, ILBM12, Targa, and Caligari's Rendition format. It also takes advantage of all the screen resolutions available to the 24-bit board on which it is running, from lo-res 320x200 to hi-res 800x600, 1024x786, and 1280x1024. It'll even reach 2400x1200, the resolution at which the Retina I tested it on hit the stops. A so-called Big Edit feature lets you work on images far too large to fit on screen or in RAM by retrieving portions of the image from the hard drive as you move around the image.

All the standard paint features are present and accounted for, including freehand mode and tools for lines, splines, curves, ellipses, polygons, airbrushes, and fills. Also available are magnification, brushes, grids, spare page, undo, masking, full palette control, color ranging and cycling, fonts, perspective, and keyboard shortcuts.

In addition to the basic coloring mode, TVPaint provides a full range of standard 24-bit paint-manipulation modes such as stamp, smooth, blur, smear, shift, shade, light, transparency, colorize, impress, and grain. The impress mode creates strange, impressionistic effects by lifting portions of the image on the spare page into the graphic. Grain adds texturing and gives a feel of solidity to "3-D desperately clean images," as the manual puts it. The airbrush, chalk, and pencil add a range of routines that begin to move computer art a little closer to traditional art media.

Paint Mixing

Four basic palettes come with TVPaint, including one composed of non-saturated colors for video work. You can save and load your own palettes or create new ones by mixing colors—just like real paint. Unfortunately, there's only one user interface to access the color-mixing process. Having the full range of TVPaint tools to mix the colors would be ►



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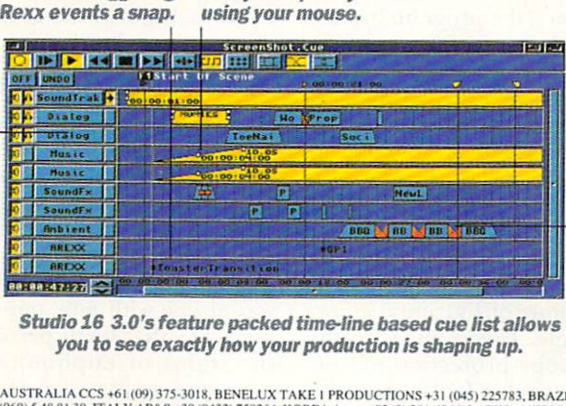
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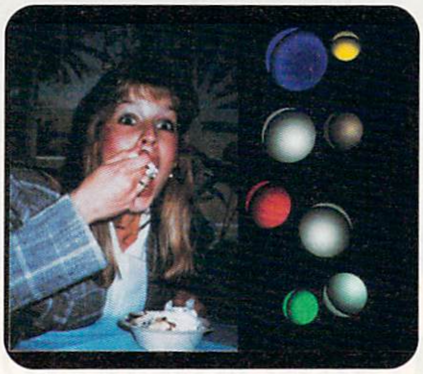
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Circle 57 on Reader Service card.

nice. Adding those mixed colors to the main palette is a tedious process, as you must add each color by hand. Painting with a color chosen directly from the mixture is an inefficient two-step process that involves pressing the right mouse on the current color indicator before you can select the new color from the mix. You should be able to grab a color from the mix with a single click.

TVPaint also provides a slew of special features, including automatic, real-time



TVPaint brings the power of 24-bit painting to the Amiga.

antialiasing. There's support for pens, pressure-sensitive tablets, and the popular three-button mouse. You'll find convolution filters for image-processing functions, density settings, Redo, ARexx automation, and digitizer connection.

The antialiasing flawlessly smooths art and fonts on the fly. The density settings provide a range of powerful, extraordinary fills and put the power of those 16 million colors solidly in the user's hands. Like a more versatile Undo command, Redo lets you try the same structures over and over with slightly different modifications.

Boosting all this power is a solid ARexx implementation. You can automate the art functions and literally build new ones with the existing tools through ARexx scripts. The samples included are a lot of fun. (Press Shift-F1 to see TVPaint draw its own logo.) It's important to note that while other computer platforms often don't even let users add simple macros to their art programs in order to automate common chores, Amiga users have access to a standardized, flexible, full-featured language that dynamically links with other programs running simultaneously. Now that's power.

The links to digitizers are very convenient, as they allow TVPaint to grab images directly from the video source. This feature works with the Impact Vision 24 and the Rambrandt boards, as well as with MacroSystem's VLab.

Further securing TVPaint's place in the video studio is yet another special feature. TVPaint is actually more than a 24-bit paint program—it's really a 32-bit program. In addition to 24 bits of color per pixel, TVPaint adds an additional eight bits for the video Alpha channel. This allows the user to bring a video source into the 24-bit image, antialias the two together, and set transparency effects.

Awakens the Artist

Computer painting with millions of colors is no less a revelation to me now than was the original 32-color DPaint. Smearing, shifting, and smoothing all those colors is a lot like working with the real thing. Smears with an oily vibrance, blends that resemble water colors, and layers of precise airbrushing are there for the taking. However, the most striking aspect of TVPaint isn't the lush color, nor the micro-fine resolution; rather, it's the smooth, responsive speed and brisk movement of the tools. Complex operations in TVPaint bog down a bit, but most respond with a strong sense of immediacy.

In keeping with its focus on artists, TVPaint supplements its numeric Preferences settings with interactive graphic settings. It's easier and more intuitive to set the density or airbrush pressure by tracing a curve with the mouse than it is with numbers.

TVPaint is hard-drive installable and multitasks nicely, although on a Retina you need to press a different key sequence to bring it up. Despite the fact that the package is imported, the manual is authoritative and useful, clearly explaining most of the technical information and even including specific instructions for each display board. It could benefit from more comprehensive tutorials, but it covers the program well.

Painted into a Corner

TVPaint does have a few nuisance aspects: For starters, the program bypasses Intuition and puts its file requesters on a separate screen. In higher resolutions, the controls and icons become tiny on a 13-inch monitor, although they're still usable. More tools that replicate natural media, such as textured surfaces, would be nice. Some of these can be constructed from tool combinations, but they are not available at a click on an artist-friendly icon.

The worst feature of TVPaint is its joystick-port dongle. If you misplace the tiny piece of copy-protection plastic, you're done for the day. It also precludes running TVPaint with other dongle-protected software (Scala Multimedia 200 and Digital Creation's Brilliance, to name but two). Fortunately, you can get a joystick-port Y-splitter dongle from the manufacturer.

Dongle or not, the combination of TVPaint and a good 24-bit graphics card puts the Amiga squarely back into the graphics game, and at a price that can't be beat by any comparable clone.

—Daniel Greenberg

Lightworks Graphics Synthesizer

***Euphonics*, $599.95**

All non-AGA Amigas.
Parallel port connector.
Hard-disk installable.
Not copy protected, but requires use of included GS-100 control box.
1.3/2.0/3.0 compatible (AGA version due late 1993).
Accelerator compatible.
Minimum system: 2MB RAM.
Recommended system: 2MB chip RAM, 68030 or 68040 accelerator.
Installation: Easy.

Hardware and software for real-time graphics manipulation.

It's time once again to break down and buy some love beads and bellbottoms, as the Sixties are back, courtesy of Euphonics and its Lightworks Graphics Synthesizer. With the intimidating label of an "integrated, interactive computer graphics performance tool," Lightworks can input computer, MIDI, and audio signals and output colorful, changing graphics in return. Just think of the dimensions that flexibility would have added to the light shows of long-ago rock concerts at the Fillmore in San Francisco and the Grande Ballroom in Detroit. Lightworks is nebulous, but then, so were the Sixties.

The Ten Percenter's Club

When I first examined Lightworks, the Summer of Love didn't spring to mind. In front of me sat a software and hardware package that swapped screen palettes and performed screen wipes on the fly. Big deal. According to the Euphonics staff, my reaction to the product was in line with nine out of ten Amiga users. It's that tenth person that sits in the sights of Euphonics' marketing gun—the multimedia performer seek-

Continued on p.73.

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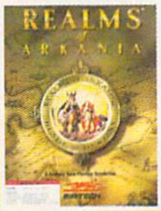
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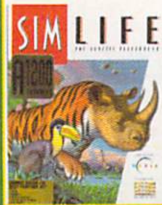
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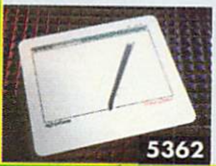
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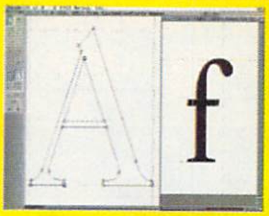
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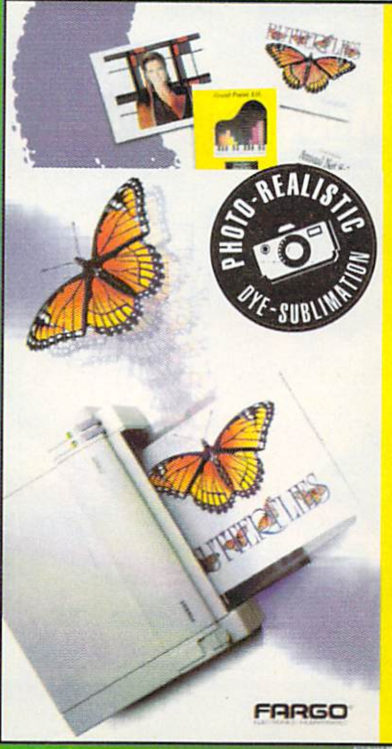
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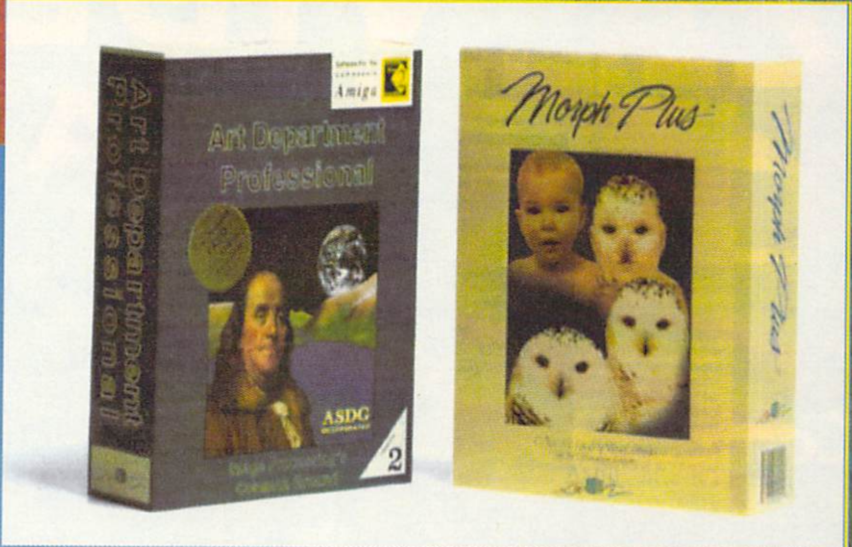
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Named the "Best Image Processing Program" for 1992 by the readers of Amazing Computing Magazine, and "Best Video Software" by Germany's Amiga Plus Magazine.

The number one color image processing package. Renowned for its speed and quality. A complete professional system offering total input, processing and output flexibility with full ARexx programmability. Read and write many image formats, perform thousands of image processing functions, use JPEG compression and print 24-bit data to Preference printers. Now includes Toaster framestore support and many new animation features. Expandable with optional modules listed below (many others available, call for details!).

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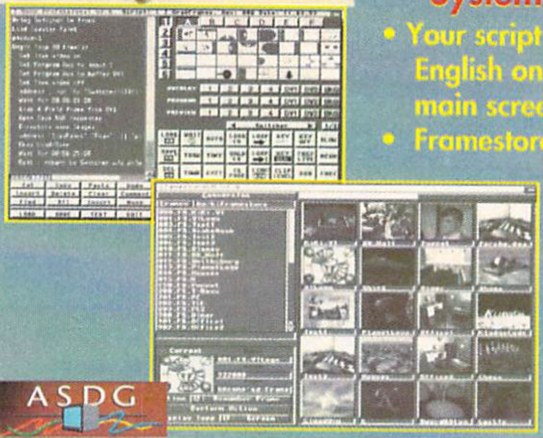
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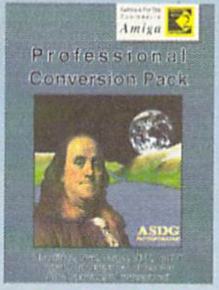
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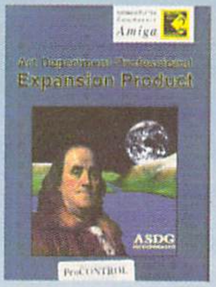


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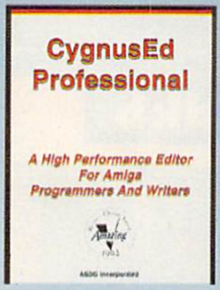


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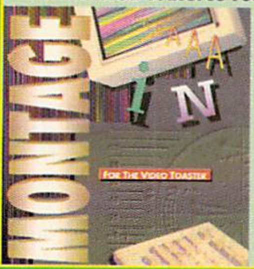
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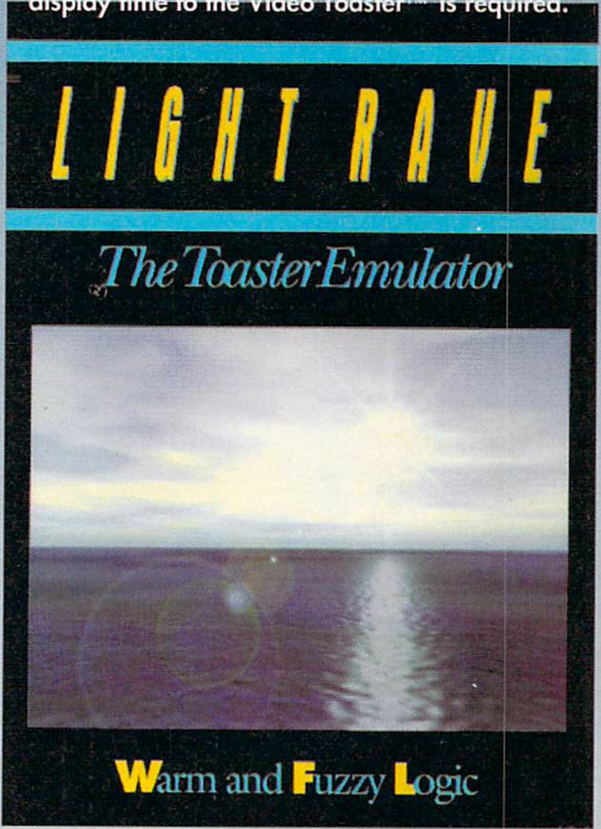


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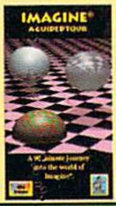
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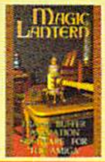
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According to Matt Drabick of AVideo magazine, "MultiFrame is a must for Amiga video users who always wanted to apply special effects to their animations using ADPro and MorphPlus but never had the time to learn how to write and execute ARexx scripts." MultiFrame is a front end for Art Department Professional and Morph Plus that gives you much greater control over multiple-frame processing with no knowledge of ARexx required.

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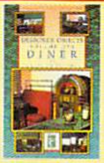
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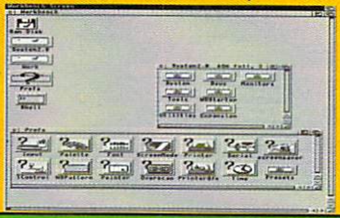
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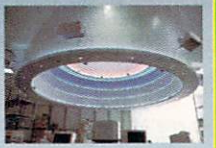


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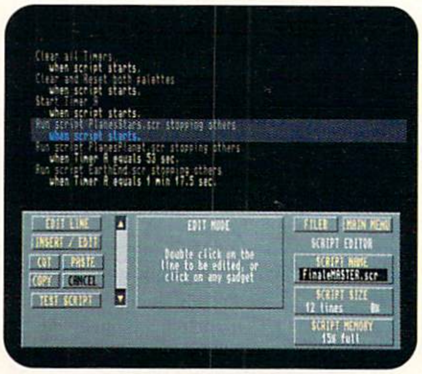
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From p.56.
ing a new means of expression. Displaying and controlling graphics driven by the beat of live music is the most visible aspect of Lightworks' capabilities.

Lightworks accepts MIDI signals and audio frequency-level input as continuous controllers for presentations. If you're hoping Lightworks breaks entirely new ground in graphic arts, you may be disappointed. It doesn't allow artists to generate graphics; instead, it allows for creative real-time control and manipulation of previously created images.



Command performance with Lightworks.

The package lets computer artists control graphics the way nightclub equipment gives DJs powerful, real-time control of music. There's nothing here that can't be duplicated with a good multimedia authoring system. The big difference is that Lightworks requires no previous experience or mastering of complex programming and procedures, and it lets you do it live. While Bars&Pipes Pro 2.0 (Blue Ribbon), for one, does let you perform some of these effects live using its Media Madness module and a MIDI keyboard, it's not as versatile.

Lightworks lets you control specific aspects of a non-HAM IFF file and its presentation. Control, as it's used here, implies manipulating graphics images and their associated presentation parameters (color, luminance, wipes, and fades, to name a few) in real time, much as a musician controls pitch, timbre, and volume. A bank of manually-controlled sliders on the included GS-100 controller box, plus stereo audio input, constitute the hardware side of things. You input signals via the mouse or keyboard, or you can route audio from a stereo system or microphone, or even send MIDI events or continuous controller messages.

Cause and Effect

Lightworks weaves its magic through user-written scripts, needed for all functions. Its fully menu-driven, English-based scripting language coordinates all aspects of a performance. Further expanding its versatility, you can trigger scripts from within other scripts. Designing a large, complicated performance using small scripts is far easier than creating a single ungainly file. Even nonprogrammers can create Lightworks scripts using simple English-type commands. Scripts contain three components: Cause, Effect, and a Controller. A sample script might appear as:

Display Picture "Motif.iff"
When Amiga spacebar is pressed
With wipe time fixed at .667 seconds

Causes include information from the keyboard, audio, or MIDI input. Effects entail procedures such as displaying pictures, manipulating palettes, starting another script, or any other function Lightworks can perform. Controllers include the mouse, MIDI input, sliders on the GS-100 box, and audio signals. You can test scripts at any time to view the effects you are creating.

You can work with a whole IFF file or combine portions of pictures using multiple wipes and fades. There are two palettes in Lightworks, a main palette and a second palette, both of which you can edit and save with the Palette Editor. Most of the controls in the Palette Editor will be familiar to users of Amiga paint programs.

You can use timers to control all events of a script or just a few repeating commands while you control other events in real time. You may specify times from 1/30th of a second to a delay interval of 192 hours, and you can loop a timer by making it both the Cause and Effect in a command.

Signals are a type of macro in Lightworks. If you set F1 as the trigger for half a dozen events and decide you'd rather have F2 as the trigger, you'd have to edit half a dozen entries. However, if you assigned the six events to Signal A, then you'd only have to edit the line "Send Signal A when Amiga F1 key is pressed." This lets you create expansive modular scripts that actually comprise many small, linked scripts.

Read and Heed

All other software and hardware manufacturers could learn something from the Lightworks manual, for it is one of the best I've seen. You'll find well-presented material and tutorials that leave nothing to chance. That's good, for the current version of Lightworks provides no easy way to set up the tutorial or other data files on your hard drive. You'll need to create directories for scripts, palettes and pictures on your own, and then set up the appropriate ASSIGN commands for the OS to recognize the program. As expected, Lightworks is a heavyweight program that slows down requester displays and most other operations when multitasking. My A3000 even ground to a halt several times when WordPerfect ran in the background, although no error messages appeared.

Euphonics does not recommend multitasking in real-time performances in any case, and for good reason. I invoked error messages regularly when I tried to load other programs through hot-keys defined with MachIV while Lightworks attempted to run a script. Warnings aside, the program's domination of the OS is acceptable, albeit a little unsettling, since Euphonics has aimed Lightworks at an ill-defined market, where a "techie" might not necessarily be an expert in the computer field. There'll be no shortage of disgruntled users if Lightworks insists on crashing in multitasking midstream.

Artists interested in new fields of art will find Lightworks to be a do-anything box. At its list price of roughly $600, it is meant as a serious tool and not aimed at the casual user. If, however, a multimedia presentation or performance lies in your future, Lightworks should be your jumping-off point, regardless of your skill level or area of expertise.

—Rick Manasa

The Deli

***Personal Video Wizards,* $250**

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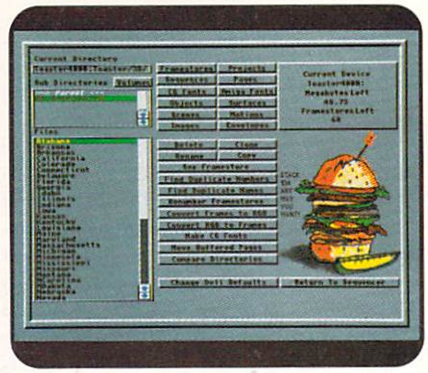
If nothing else, successive incarnations of NewTek's Video Toaster have spawned a number of products, most bearing names with a culinary twist. Not a company to buck the trend, Personal Video Wizards recently released "The Deli" to the Toaster add-on market.

The array of Toaster products already includes programs such as Toaster Toolkit and T-Rexx Pro, which allow you to ►

create scripts that execute a series of Toaster moves automatically. By taking an approach that differs slightly from existing products, PVW has positioned The Deli to become the product of choice for those seeking a simple way to display a series of framestores.

Those familiar with Toaster sequencers know that they merely provide buttons for each of the Toaster's ARexx commands. While selecting a button is more convenient than typing commands, you still must perform a series of steps in order to display a framestore picture from within a script. The process typically entails selecting an unused digital-video buffer on the Preview bus, loading the framestore into that buffer, selecting an effect and speed, performing the effect, and finally waiting a specified amount of time until the next event.

The Deli makes life with your Toaster a lot less complicated. As long as you're willing to accept the default values (effect, speed, and time displayed) for the next transition, you can add a picture display to the script simply by clicking on its name from a list of framestores. The Deli's interface is similar to that of other Toaster sequencers. On one side of the screen is a list window displaying the lines of script that it creates. Opposite that are buttons for various commands. The top of the screen is devoted to a list of framestores and a miniature version of the Toaster effect buttons.



A tasteful sequence of events served up by The Deli.

You can use these controls to select an effect to use when bringing the framestore on, the speed of that transition, and the amount of time that the picture remains on the screen. Once you've chosen these settings, they are used with each framestore you select. If you don't want to use the same transition for every picture, yet don't have the time to select each one individually, the program provides a "random group." With this setting in effect, The Deli picks a transition for each picture from a pre-selected group.

When you select a framestore, a single line of text is added to the script display, showing the framestore number and name, the transition used to bring it on, the speed of the transition, and the duration of the display. The single-line method makes it easy to edit simultaneously all commands that pertain to a single display—a clear improvement over having separate lines for each setting.

Various buttons let you cut, copy, paste, and add comments to each line of the script. Other buttons allow to you save, load, insert, delete, clear, and print whole scripts. A "Group Entry" control allows you to add a whole series of framestores at one time (e.g., pictures 107–214), and to replace every instance of one framestore in the script with a different one.

ON DISPLAY

While The Deli's primary mission is to readily show sequences of framestores, it also provides control over some other Toaster functions. Using auxiliary but- ►

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tons, you can select any of the external video inputs for display purposes, change and display the background color, overlay a CG page on the current display, or select a video clip to play from a VCR (though only a few RS-232-controlled VCRs are currently supported). A simple loop function lets you play the current script in its entirety over and over, but cannot loop just a section of the script.

While The Deli lets you control many Toaster functions from a script, there are a number, such as luminance keying and still-frame capture, that you cannot include in a script. The Deli also fails to include a number of features found on some of the other popular Toaster sequencers. For instance, it does not allow you to create new transition effects, nor does it let you edit your effects panels to change the placement of effects icons.

On the plus side, The Deli includes useful utilities that aren't found in other Toaster sequencers. There's a Toaster-specific directory utility, similar to DiskMaster or Directory Opus, that uses a point-and-click display to copy, delete, rename or duplicate files. Unlike the others, though, this one knows where the Toaster keeps its files. If you want to work on Framestore or Project files, there are buttons that will take you to those directories. There are also buttons for the directories where buffered CG pages, CG fonts, and Amiga fonts go , and where objects, scenes, motion paths, envelopes, and surfaces are stored. This may sound insignificant to those who know their way around a file requester, but it can be important to videographers who haven't a clue where to find files they've created with the Toaster.

Another button lets you find and renumber framestores with duplicate numbers. This solves the nagging "disappearing framestore" problem that arises because the Toaster can store several frames with the same number, but displays the name of only one. Other buttons convert framestores to IFF format, or vice versa. Finally, there is a button for converting Amiga system fonts to CG font format. This task previously required you to tackle the "ToastFont" utility, which runs only from the CLI.

OVEN-FRESH

The Deli is a brand-new product, and as such, there's the usual assortment of bugs and anomalies. For example, the font-conversion utility looks for the ToastFont program in the wrong directory, and the utility would not work until I had moved the ToastFont program into the VT: directory. Also, a guru appeared once when I tried to use the Freeze function, while at other times that function worked fine. On the whole, however, these problems were not serious, and should be fixed soon (send in those registration cards, folks).

I was also somewhat disappointed by the manual, which is written as a straightforward reference. Considering the target audience of computer-shy Toaster users, a more user-friendly approach would be more appropriate than a terse explanation of each button.

Overall, The Deli succeeds as a tool for those who want to assemble a scripted slideshow. Its Toaster-aware directory utility should also prove a real lifesaver for users who have no prior experience with Amiga computers and for those who don't know how to get rid of files they no longer need. The Deli may not have all the features of its competitors, but then again, these features won't help novices if they can't figure out how to use them. If you yearn for simplicity rather than complete control, or just for a good Toaster utility, The Deli may satify your hunger.

—Sheldon Leemon ■

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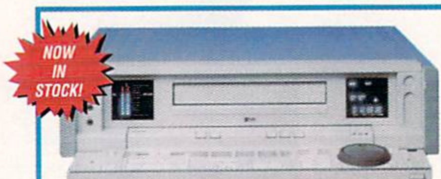
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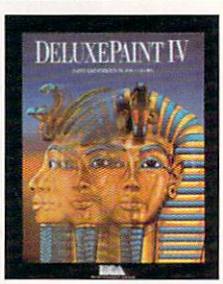
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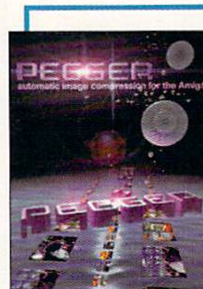
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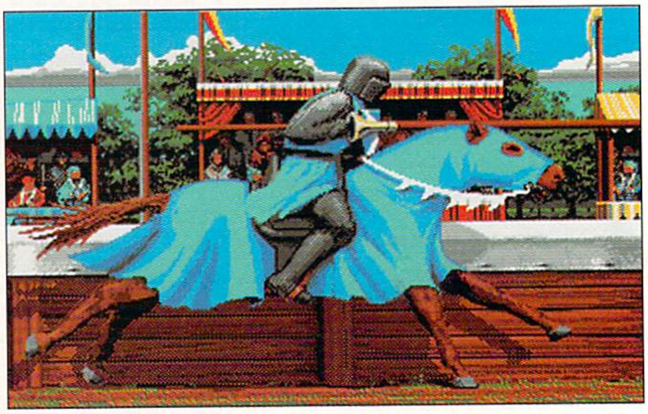
TALK ABOUT A long gap between a game and its sequel. Seven years after Cinemaware debuted with Defender of the Crown on two floppy disks, artist Jim Sachs has given us **Defender of the Crown II** on CD-ROM for the CDTV, A570, and CD32. It returns a changed game—changed substantially for the better.

It may initially seem an odd choice for a follow-up. Defender of the Crown's legend owes more to the game's Amiga heritage and graphic beauty than to any real strength of character. The pictures and animations were delightful; they altered forever our concept of what a computer game could look like. No longer a blocky toy, this was a virtual art gallery.

The game itself…ah, well, there really wasn't much to it. At its heart was the simplest of conquer-the-world games, and the attached action sequences were either too easy (swordfighting and running the siege catapult) or far too difficult (jousting).

But it *was* gorgeous.

It is a testimony to the durability of DOC that most of those 64-color graphics remain intact in Defender of the Crown II (***CDTV Publishing***, $39.95)—from title screen to tournament trumpeters to castle in peril. Sachs, who assembled the entire project himself under The Director 2, indicates that only about a half-dozen new screens were added—as well as some trimmed from the original game to squeeze DOC onto two disks. (The sideways view of the charger that accompanies this review, for instance, is new; Sachs also modeled the new version of Robin Hood in this game on himself.)



One of several new screens in Defender of the Crown II.

This may give the impression that DOC II isn't exactly a new game, and that's true; it's closer to a "director's cut" of the original DOC that repairs the obvious weaknesses, gives the game engine more muscle, and takes advantage of CD storage. (Note: While it's not an AGA game, it runs fine on the CD32 and the code has been optimized to take advantage of the speed of that machine's '020 processor.)

DOC II occupies about 150 megabytes on CD—much of it given over to Sachs' pleasant CD-quality music (written under MusicX) and digitized readings, in five languages, of about half the game's 10 pages of text. It's very professionally done—the English-language reading is the work of a Shakespearean ac- ►

CRIB NOTES

Indiana Jones and The Fate of Atlantis

As a German colonel must have said to Indiana Jones in a sinister accent at *some* point, "Mein gut doktor, I've afraid ve haf had a slight shange of plannn…" It seems the Nazis have stolen *AW's* Christmas game-cheats column, and are planning to use it in an attempt to find Atlantis. (All those type-in codes, y'see.) The interests of saving the free world, and using up *AW's* supply of blue ink, demand that we stick with Indiana Jones (*LucasArts*) for at least another month.

Last time, we'd just wrapped things up in Monte Carlo by acquiring the Sunstone. That allows Indy to move on to the Greek island of Thera, where he's looking…well, really just for a way to get *off* the Greek island of Thera, which is only a waystation. It doesn't look good, though: The portmaster says there will be no boats or planes for a week, and that, for the time being, is where his helpfulness ends.

You should be able to find an alternative mode of tranportation by poking around the crates toward the middle of the dock—by balloon!—but the portly fellow wants an invoice first and won't surrender the big basket over by his shop without a souvenir from the dig in the mountains. (However, you *can* nail the fishnet hanging to the right of the shop without interference, so grab that at your leisure.)

Well, there was a dig in the mountains—some rather Monkey Island-ish business getting there, too—but, as in Algiers, it's abandoned. Very convenient for you, as you can go picking things up with impunity. Start with the invoice, which is on the lid of the empty crate outside the dig (which you'll have to close), and the entrenching tool inside. Naturally, your arrival sets off a cave-in, and opening the tool to dig your way out reveals a note from—who else?—Sophia, who's managed to get herself kidnapped by the Nazis and is being packed off on a U-boat down at the boondocks. (Hey, I thought there were no boats for a week!)

You probably want to race after her—but in what, Dr. Jones? You'll need a basket for your balloon, and you still haven't retrieved an appro- ►

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tor—and lends a good deal to the game's sense of theatre, along with things like the splendid silhouette of a galloping horse inserted between scenes.

Of course, we'd expect these things from an artist, but the differences here are more than cosmetic. Now, says Sachs, "it's a pretty deep game. It's like chess. There's a lot going on behind the scenes that people who just jump in don't know about."

For one thing, in this version, you're no longer trying to become king yourself, but to raise £20,000 to ransom the imprisoned once and future King Richard—a more noble (and not insignificant) task. The catapult can now fire two sizes of boulders and firepots—the latter with an impact on enemy morale (also a new concept). (Unfortunately, the catapult's initial setting for each type of boulder is identical from use to use.) The raid and rescue sequence has been made notably tougher—there's a method to the swordplay now—and the tip of your lance no longer dances crazily as it approaches your foe's shield in the joust.

You can have the option to let your advisors control your resources—they're a stingy lot—and the game now incorporates concepts of spying, castle guards (in addition to the knights and soldiers, and the buying and selling of land. And just in case you wondered, 12th century England frowns on the practice of selling land and then marching in your army and taking it back by main force.

It's much more fun to play, and considerably tougher. (I had to struggle with the game for better than a week to muster more than £10,000.) Sachs promises that those who do persevere the game with be rewarded with a spectacular conclusion. That's unusual in itself—most games are "you're done, get out, goodbye"—but then this is an unusual story.

Nice to have you back, Jim. Any chance of finishing up "20,000 Leagues Under the Sea"?

Continued on p.88.

CRIB NOTES

From p. 80.

priate souvenir for the portmaster. You're not alone; a number of people found this tricky. Close the door at the far left side of the dig, and a little compartment will open up to the right of the door. Insert the sunstone, and then look at it.

Hey, it looks almost like the game's copy-protection scheme! But what's the right setting? Like so many other things, it's in—all together now—Plato's Lost Dialogue! Specifically, on the bottom left of the third page marked by a paper clip. If you get it right, you'll hear a click, and when you open the door again, you'll find an ancient carved sign. Take it and head back to "town0" to make your swaps of invoice for balloon and sign for basket and connect them with the fishnet (with a free translation of the sign's inscription thrown in).

Now you know you're bound for Crete, but there's still no gas in your tank. You need to inflate the balloon, and there's just one filling station on the island: the natural-gas vent outside the mountain dig. (You'll need the hose from the Algiers dig here as well.) And now you're off, in overhead mode again, trying to come to grips with the wind and control system and find the sub. (Notice how the natural gas is now "hydrogen" and the balloon has suddenly acquired "ballast"?)

This has proved another difficult business for some of you, much like the search for Omar back in Algiers. Note that the balloon won't go down anywhere except on land; won't deviate from a straight-line horizontal course when at its lowest possible altitude; and can be "steered" with the compass when in the higher air. (Looking for LeChuck Dept.: If anyone found anything of interest on the islands you can land on along the way, I'd like to hear about it. I dropped in on a half-dozen, and never saw a thing.)

When you do find the sub, save the game and try to land as close by as possible. To get you on the sub—and off again (no easy feat)—we'll have to wait for the next installment. □

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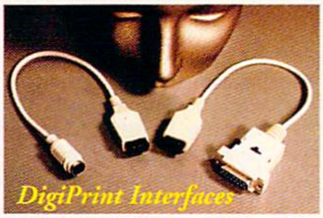
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From p. 82.

ISHAR II

A–
1.3 ✓
2.0 ✓
3.0 ✓
Hard-drive installable.
No copy-protection.

ONE OF THE unique features of the Amiga's international status is that the left hand often doesn't know what the right hand is doing. It's a double-edged sword. (Don't all swords have two edges?) Games developed abroad may escape our attention in the US for years, and vice versa. For example, Europe has only recently come to grips with Sir-Tech's Bane of the Cosmic Forge.

On the other hand, if you do nose around a bit, it's possible to discover any number of delightful releases of which you have no previous knowledge—and which hence give the appearance of having sprung fully-formed from their authors' heads. (Imagine discovering the collection of Ultima role-players on the Amiga in one fell swoop.)

Such is the case with the splendid RPGs from the French label Silmarils. A few years ago the company released a little-known game called Crystals of Arborea that featured an unusually large view window, atmospheric graphics, and a genuine impression of being outdoors (when you were in the woods, you never felt you were just sitting in the midst of four tree tiles).

Last year, Silmarils finally released a follow-up—the newly AGA-ed Ishar (see "AGA Attack," p. 31)—and only recently released **Ishar II** (distributed in Europe by ***Daze Marketing***, about $35).

It's the best yet. This right hand could teach the left a thing or two about RPGs.

For one thing, they've addressed the tyrannical control players typically are given over a party. You can't just recruit characters and kick them out as you please. This little governmental unit is a democracy, and the other members have a vote. (Listen up: They may be trying to tell you something.) This is, as far as I can tell, the first RPG in which characters have personal likes and dislikes.

There's a decent amount of combat, but much of it is truly momentous stuff. You don't feel the game is just tossing experience-point food at you; the encounters tend to mean something. It's almost Dungeon Master-like in concept: Just click on the weapon you want to sock the enemy with.

A notable addition to Ishar II is the inclusion of on-line maps that show your precise position within the game. (In Ishar, you had a game map, but knew your position only relative to landmarks.)

Movement is still square by square, but the lovely scenery is so varied that every picture seems different—a fairly incredible feat. And there's none of the tedium typically associated with plodding through too much of the same terrain.

And speaking of terrain, being in the woods is still an outdoorsy experience. (Even more so, in fact.) And if you push far enough into the game—no small achievement—you'll be party to one of the more persuasive illusions of mountain climbing since Final Assault.

Happily, Ishar II may not remain unknown much longer. Psygnosis (who else?) has picked up US rights and may have released the game here under the name Arborea by the time you read this. (Hope it's the 256-color AGA version.)

Left hand, meet right hand. ►

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Dalek Attack

D
1.3 ✓
2.0 ✓*
3.0 ✓
Not hard-drive installable.
No copy-protection.

This handsome but empty-headed sideways-scrolling thing (*Alternative Software*, about $25) is based on the celebrated and peculiar English TV series *Doctor Who*. You save the Earth while getting chased by what look like irate salt and pepper shakers. It's dated and unsophisticated, if varied—Dalek has the feel of one of Ocean's low-end arcaders given a good scrubbing—and subject to bizarre slowdowns under 2.0. The shareware/PD game by Accursed Toys (of Boppin fame) was more fun.

MicroLeague Baseball Data Disks

B–
1.3 ✓
2.0 ✓
3.0 ✓
Hard-drive installable.
No copy-protection.

It's been ages since anybody put out a data disk for a baseball game on the Amiga; even the ones for Electronic Arts' splendid Earl Weaver Baseball petered out around 1990. So it's bound to come as a pleasant shock when *MicroLeague Interactive* issues not one, but dozens of disks for its MicroLeague Baseball: The Manager's Challenge. They include season disks for the years 1982 to 1992 ($19.95 each); World Series disks for each decade from the '50s to the '80s ($24.95 each); All-Star disks for ten seasons as current as 1983 and as far back as 1933 ($24.95 each); and franchise history disks for the 26 pre-1993 major league teams ($24.95).

The thoroughness is more than commendable—it's almost dream-like for devotees of the parent game—and these add-ons seem to work well both within the main program and with the GM/owners disk (which permits trades). However, I wish they'd gone one more step. No new stadia are included, so you're still limited to the three in the master program—and that isn't likely to encourage many MicroLeague managers to set up leagues. And while this is now probably the best stat-based baseball game for the Amiga, my testing suggests that MLB's engine is still a bit tilted in favor of the pitcher. Still, you take what you can get...and this is a lot.

Cohort II

B–
1.3 ✓
2.0 ✓
3.0 ✓
Hard-drive installable.
No copy-protection.

I banged Merit's Fighting for Rome (aka Cohort) pretty hard here about a year ago, and if *Impressions*' Cohort II was purely a standalone product, I'd probably be banging it pretty hard, too. The Micro Miniatures system used in this Roman wargame is still ponderous (especially used on this scale); the control icons still don't look like what they're about; and the arrows move as though they have inertial guidance systems. At times the whole thing puts me in mind of one of those vibrating football games in which the opposing lines stand there shaking at one other, with none of the fever or fun of battle.

But for all that, I'm surprised to find I can't bang Cohort II very hard, and that's mainly due to its ability to piggyback onto Impressions' excellent city-builder Caesar (which nailed a B+ a few issues back)—much in the fashion that Breach 2 attaches to Rules of Engagement. This lets you fight out Caesar's battles (greatly simplified within that program) in detail.

On its own, Cohort II is more of the same, but in tandem with Caesar, it's an enormous improvement.

Project-X

A
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

If you haven't heard of Project-X (*Team 17*, about $25), you must be an MS-DOS jockey. This be-all-and-end-all of sideways-scrolling shoot-'em-ups is full of gorgeous stuff you normally see only in arcades, and of a size usually reserved to the end of levels. It's no wonder the genre has more or less died out of late; Project-X may have upped the ante so high that no one else wanted to play.

Trouble is, the original Project-X was unplayable by mere human beings. Er, I mean, you could play it...but you couldn't get very far without an Action Replay cartridge, the reflexes of a wood elf, and a strong sense of self-preservation. File under "interactive demos."

In this budget reissue, the developers have allowed the game's innate potential to seep through, with a rookie mode that allows you to get much further into the game, significant tweaks (mostly in the weapons division) to improve play, and three disks instead of the original four. Cheers to Team 17 for not just handing out the same stuff all over again. Project-X remains a steep uphill battle, but it no longer feels like a tilted one, if you get my drift. ■

To locate vendors of the products reviewed in this month's "Game Preserve", see the "Manufacturers'/Distributors' Addresses" list on p. 100.

Circle 12 on Reader Service card.

Circle 12 on Reader Service card.

HELP KEY

This month, the Hi8s and lows of outputting graphics to film, and the smart shopper's guide to modems.

By Tim Walsh

What Price, Modem?

Q. *I've been considering getting a modem for my Amiga 600. Is the SupraModem 2400 a good choice? What kind of software do I need, and where can I find it? Finally, how much does it cost to dial up a bulletin board?*

Jimmy Engstrom
Basking Ridge, New Jersey

A. Well, those are general questions best addressed with specific answers. Many incarnations of the SupraModem exist and you should choose the best one that suits your needs and budget. The basic no-frills SupraModem 2400 is a good choice for your A600. Want to spend a little more money? The SupraModem Plus has a few extra bells and whistles, including error-checking correction and logic. If you are willing to spend even more, there are also offshoots of the SupraModem with 2400/9600 V42.bis options—the international standard protocol for a 4:1 data compression and error-detection technique that recognizes if files being transferred have been compressed using ARC, ZIP, or other popular compression utilities. With V42. bis options, text or binary data is compressed "on-the-fly," resulting in shortened file transfer times (up to four times faster).

There are also various SupraModem 2400i models, which are internal modem cards for A2000, A3000, and A4000 users.

Initially, you shouldn't worry too much about a telecommunications program—nearly any modem that you buy will come with at least a simple terminal program for initially getting on line, and assorted programs for configuring your hardware and software. When ordering the modem, be sure to specify that you need Amiga software.

When you are ready for a more advanced telecommunications package, bear in mind that telecommunications software comes in many forms. There are popular commercial packages for your Amiga, such as ATalk III (packaged with some Supra modems), but you should also consider some freely distributable offerings. A program that springs to mind is Term, by Olaf Barthel, recently updated with a version for 68000/68010-based Amigas, such as your A600. It's a hefty package that you can find on just about every major network, and some PD disk collections. Other top-notch freely distributable options include X-Comm by Edward Lawford and William Waring, and NComm 3.0 by Torkel Lodberg.

That brings us to your final question: What does all this cost? For local BBSs, the cost is usually minimal. If it is a "free" BBS, and you are making a local call, there really isn't any cost involved beyond the initial outlays for hardware and software. Most major telecommunication networks average between $10 to $20 per month for subscription fees and minimal usage during non-prime (evening and weekend) hours. This is an absolute bargain, once you discover the new dimensions telecommunications adds to otherwise mundane computing.

On To Hi8

Q. *I haven't had any luck finding companies or products capable of transferring computer graphics to Hi8 or 16mm film. Can you help?*

Frank Slabinak
Lyons, Illinois

A. Outputting first-generation computer graphics to professional quality Hi8 (a more popular video format than 16mm) equipment in itself isn't difficult, provided you know the options at your disposal.

Most Hi8 cameras and VTR decks accept composite video input, and (like S-video compatible VCRs and camcorders) most Hi8 equipment also accept signals as input through a four-pin DIN, a single port with separate Y/C picture and color channels.

Here are a few Amiga-to-video output scenarios; bear in mind that there are numerous hardware and software combinations that allow for the flow of video signals between your Amiga and video equipment. For starters, get a high-quality external genlock to move video signals between your computer and the video equipment. Two come to mind: Great Valley Products' G-Lock and Digital Creations's SuperGen SX, both of which have the ability to input, transcode, and output either Y/C or composite video signals. You will never outgrow the need for a good transportable genlock, no matter how expansive your video hardware inventory becomes.

Since you are limited to precious few video input/output options if all you have is a genlock, a few more pieces of hardware are needed. If your video equipment is frame-accurate, one option is to invest in hardware that allows the output of 24-bit animations directly to professional quality videotape. The traditional method has been single-frame recording; however, the best solution is Digital Processing System's Personal Animation Recorder ($1995).

You will also need time-based correction to control your video signals. The Kitchen Sync ($1295) from Digital Creation and DPS's Personal TBC IV ($999) both address that problem.

Another video output device is GVP's IV24 2.0, which can output Amiga video signals to a multitude of video devices, in some cases even without the need for additional time-base correction hardware. ■

Can't get a handle on your system? Write to Help Key c/o ***AmigaWorld****, 80 Elm St., Peterborough, NH, 03458.*

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ANIMATION - INSTRUCTIONAL

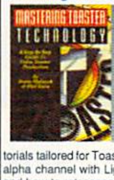
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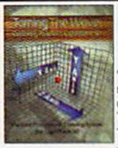
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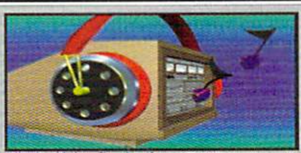
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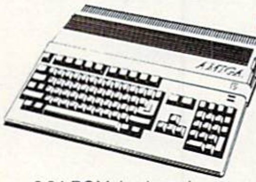
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_AW_ SHUCKS!

In the article "Double For Nothing" regarding ParNet networking (Oct. '93, p. 39), author Rob Hays's bio notes incorrectly state that a ParNet setup allows him to access AGA modes from his A3000. What it should say is that the network enables Hays to use his A3000's hard drive from his A1200. Sorry for any confusion this mistake caused.

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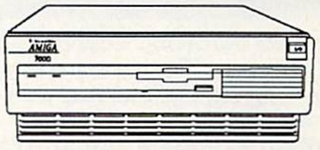
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THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

Back To Square One

I was very disappointed to read about the all-new Amiga CD32. I can't believe that Commodore would take this path with the Amiga. Commodore has been struggling to break the game-machine myth since the Amiga's inception. The Amiga should have, by all rights, taken its place at the forefront of the computer world, having the best operating system and architecture of any personal computer. Even today, with IBMs and Macs trying to multitask with pitiful results, the Amiga still has the cleanest and most powerful operating system. With the advent of AmigaDos 2.0 and the new AGA machines, and the Amiga's prominence in the video industry, I thought that the Amiga was finally breaking that mold, and that it finally had a shot at the position it deserves. With the CD32, all that goes out the window. It ratifies the myths and secures the Amiga for game-machine status. Commodore has taken a huge step back for a wonderful computer.

Brian Tietz
Cupertino, California

AGA Dilemma

It has been several months since the release of the A1200 and the A4000 and I have yet to hear anything about a motherboard revision or an AGA card for the A2000/3000. As an owner of an A3000 with an IV24, an external Syquest hard drive, dual floppies, and so forth, I would much rather buy an AGA card or motherboard revision than sell my machine at a loss and then shell out more money for an equivalent A4000. Someone might argue that other platforms do not have the graphics, modeling, rendering, or music software that is available for the Amiga, but this is becoming less true all the time.

I really do love my A3000, but my point is that Commodore needs to either drop the price of the new AGA machines or produce an AGA card and/or motherboard revision for the A2000/3000. Most of the Amiga users I have seen do not have the money to dump their machines at a massive loss and then turn around and spend thousands of dollars on a new AGA machine.

John Giersdorf
Fort Ord, California

CD32 Critique

At first glance, the Amiga CD32 looks like something the designer of the TRS-80 would have created. I must say, this doesn't look good for its future in the US, and if Commodore markets the machine like it has done with others in the past, then I don't have any hope of it having much of a future. Is Commodore going to advertise on television to the younger generation who doesn't know anything about Amigas, megabytes, or 68EC020 processors? I hope for once that Commodore realizes that the US market isn't the same as the UK's.

Joseph Drippe
Bellbuckle, Tennessee

The CD32... secures the Amiga for game-machine status. Commodore has taken a huge step back for a wonderful computer.

Power Up Problems

I find it interesting that your magazine can devote two issues to the new Amiga 1200 and then not even write or create any columns, articles, or reviews of software which may be compatible or even available for the A1200. I was an owner of a 1MB A500 and after reading the January issue, weighing the upgrade cost, and considering the advice of a friend who purchased one, I decided to make the move to the "mainstream Amiga." After reviewing the June and July issues, I'm beginning to wonder if I made the right choice. I am still waiting for my free software from Commodore since the end of March. Long distance calls to a number concerning the Power Up software, [produced a message stating] that it was shipping over two weeks ago. Are there that many of us A1200 owners?

Paul Moy
Atlantic City, New Jersey

Editor's Note: If you participated in Commodore's Power Up program for a new A1200/4000, and still have not received the free software, please call Commodore at 215/431-9420 and leave your name and address.

Crossed Signals

I would like to correct an error in the October '93 issue concerning Bob Lindstrom's article, "Cross-Platform Computing." Under the section covering MIDI and sound-sample conversion, Mr. Lindstrom states that "currently, only Synthia Professional ...supports cross-computer conversion...with support for AIFF (and) Sound Designer." Dissidents' Sample Wrench 16-bit sound-sample editor supports AIFF as well as Sound Designer with or without MacBinary header. Studio 16 from SunRize Industries also supports AIFF. Indeed, many users of Sample Wrench utilize Studio 16/AD516, and transfer sounds between the two applications using the AIFF format.

Jim Fiore
Dissidents

MacroSystemUS

P R E S E N T S

RETINA

AGA Emulation on an Amiga 2000/3000!

Now with the new RetinaAGA real time AGA chipset emulator you get the features of the A4000. This means you can have a 256 color Workbench and run AGA programs on your A2000 or 3000. So don't try to guess what the AGA machines look like, find out for yourself with a RetinaAGA for a whole lot less!

The Retina is the first single card solution integrating the best features of the Amiga's graphical user interface with the ability to display **Workbench or AmigaOS compliant programs (on their own custom screen) in resolutions up to 1280x1024.**

- XIPaint real-time 24Bit paint program comes with the Retina™
- The Retina™ can still be used to display 24Bit graphics while displaying Workbench.
- **Retina animation software included to make 8, 16 or 24 Bit animations.**

Just some of the many packages supporting the "Retina" are ADPro, Aladdin 4D, MorphPlus, MultiFrame-ADPro, ProPage, Pagestream, Prowrite, Imagine2.0, TVPaint2.0 Professional, Dynacadd, Panorama, Real 3D 2.0 and our own VLab.

- Requires VGA and up monitors.
- Ram Configurations 2 MB or 4 MB.
- Compatible with the A2000, A3000, and A4000 series Amigas. Installs into any 100 pin Amiga slot **does not use the video slot.**
- Compatible with the **Video Toaster and OpalVision.**

Requires the 2.0 or greater operating system.

TVPaint 2.0 Professional

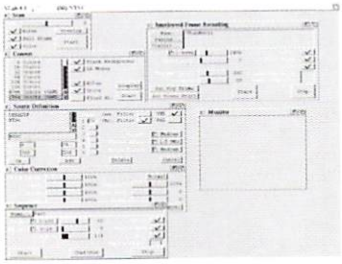
The State of the Art in 24Bit Painting for the Amiga. TVPaint is the fastest 24Bit Paint Package available for the Amiga.

Some of TVPaint's features: Automatic Antialiasing on drawing tools, Powerful Airbrush tools, Density control on tools, Full Undo/Redo, Spare/Swap screens, Convolution Effects, Definable Magnification Window, Custom Masks, Pressure Sensitive Tablet support, Color Lookup Tables. **Recommended by NewTek for use with the Video Toaster System.**

Retina Version	Suggested List	$599.95
Multiple Version	Suggested List	$799.95

VLab Y/C

New IFR - Digitize 30 FPS video from video tape!



The VLab includes an extensive software control system designed to make digitizing as easy as possible. For the first time building lengthy digital video segments no longer requires expensive and slow frame-by-frame digitizing. Using a revolutionary new concept, MacroSystem has provided a new Interleaved Frame Recording feature (VLab and VLab Y/C). **Interleaved Frame Recording or IFR basically allows the VLab to digitize full 30fps digital video sequences to HardDisk by making multiple passes of the recorded video.** The VLab will digitize the number of frames specified to either HardDisk or Ram as sequentially numbered frames.

Hardware Features

- Frame grab in 1/30th sec. or Field grab in 1/60th sec.
- Digitizes full frame full color - NTSC or PAL signals.

Software selectable inputs include:

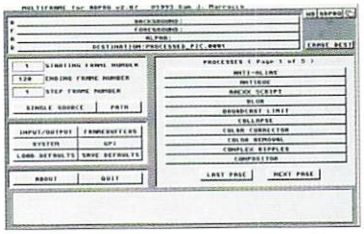
- VLab - 2 Composite inputs.
- VLab Y/C - 1 Y/C & 2 Composite inputs.
- VLab 1200 - 2 Composite inputs.
- **Time Base Corrector not required.**
- Compatible with the **Video Toaster and OpalVision.**

Software Support

- VLab control windows allow you to keep multiple critical controls open at the same time. And the monitor window display lets you see exactly what you are digitizing.
- Real time Color, Contrast, Luminance and Gamma, Luminance, Chromanace controls.
- **AGA chip set support.**
- **Includes ADPro Loader module.**
- Extensive ARexx control system.
- Save images in 24Bit, YUV, or AGA.
- The VLab™ is supported by many popular Graphics programs.
- Supported by the Nucleas Personal SFC.
- The VLab™ requires Kickstart 2.0.

MultiFrame - ADPro

According to Matt Drabick, of AVideo magazine "MultiFrame is a must for Amiga video users who always wanted to apply special effects to their animations using ADPro and MorphPlus but never had the time to learn how to write and execute ARexx scripts."



MultiFrame is a front end for the Art Department Professional and Morph Plus that gives you much greater control over multiple-frame processing with no knowledge of ARexx required. You can manipulate single or multiple images over time creating special effects easily. **The perfect tool for creating effects with a large number of images for output to video.**

MultiFrame Features:

- **Process images over time** - most processes can be manipulated with a starting value and an ending value with the separation being the number of frames that you choose to make. **Generates all frames automatically for you.**
- **Non-linear motion** using true splines with adjustable knots, tension, continuity and bias. Full spline- controlled variables.
- **Perform ADO-style fly-ins** of moving images easily using perspective operator. Create panning/tilting camera effects on still images or sequences.
- **Multiple frame/Multiple Ripples,** allowing ripples that start on different frames that accelerate/decelerate over time.
- **Rotoscope:** Automatic compositing of foreground images over backgrounds using true alpha-channel/holecutter/key effects.
- Automatic scaling and conversion of images during processing.
- Auto-Display of images to supported framebuffers (Retina, Firecracker, OpalVision, Harlequin, DCTV).
- Complex operator/processes (sphere, perspective, etc...) now allow loading and saving of all parameters for easy recall.
- **Automatic conversion** of any supported image format to any other format (including ANIM-5/ANIM-8 and **Toaster FRAMESTORE**) during processing.

MacroSystemUS

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